ENVIRONMENTAL PROTECTION AGENCY

TECHNICAL ENFORCEMENT SUPPORT

AT

HAZARDOUS WASTE SITES

127

TES IV
CONTRACT #68-01-7351
WORK ASSIGNMENT #95

FINAL RFA REPORT
MAYTAG COMPANY, PLANT NO.2
NEWTON, IOWA
U.S. EPA ID# IAD005285689
EPA REGION VII

JACOBS ENGINEERING GROUP, INC.
PROJECT NUMBER 05-B285-00

ASSIGNED TO:

TETRA TECH, INC.
PROJECT NUMBER: 3620-09

PRELIMINARY ASSESSMENT JULY 1987

FINAL RFA SEPTEMBER 30, 1988

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1.0 INTRODUCTION

The purpose of this report is to document the RCRA Facility Assessment (RFA) of the Maytag Company Plant No. 2 in Newton, Iowa. This report combines the findings of the Preliminary Review (PR) phase, the Visual Site Inspection (VSI) phase, and the Sampling Visit (SV) phase of the RFA under the RCRA Corrective Action Program. The VSI was conducted by Tetra Tech, Inc. on June 15, 1987 and the SV, September 16, 1987. The sample data from the SV has been incorporated into this report. The purpose of the RFA is to identify and gather information on releases at RCRA facilities, to evaluate solid waste management units for releases of hazardous materials to all media, and to determine the need for further actions and/or interim measures.

1.1 Hazardous and Solid Waste Amendments and Other Authorities

The Hazardous and Solid Waste Amendments of 1984 (HSWA) provided the U.S. Environmental Protection Agency (U.S. EPA) with the authority to require corrective action at RCRA treatment, storage, and disposal facilities (TSDFs). The new authorities are as follows:

- 3004(u) Corrective Action for Continuing Releases

  Requires that any permit issued after November 8, 1984, provide for corrective action for all releases from solid waste management units (SWMUs) at the facility. The provision also requires that owner/operators demonstrate financial assurance for any required corrective action, and allows schedules of compliance to be used in permits where the corrective action can not be completed prior to permit issuance.

- 3004(v) Corrective Action Beyond the Facility Boundary

  Directs the U.S. EPA to issue regulations requiring corrective action beyond the facility boundary where necessary to protect human health and the environment. The only exception to this is if the owner/operator can demonstrate that he is unable to obtain permission to take corrective action on off-site property. Until the regulations requiring corrective action beyond the facility boundary are promulgated, corrective action orders may be issued to require the necessary corrective action.

- 3008(h) Interim Status Corrective Action Orders

  Provides authority to issue enforcement orders to compel corrective action or other response measures at interim status facilities, as well as authority to take civil action against facilities for appropriate relief.

The 3004(u) provision focuses on investigating releases from SWMUs at RCRA facilities. SWMUs are defined as "any discernable [solid] waste [as defined in 40 CFR 261.2] management unit at a RCRA facility from which hazardous constituents might migrate, irrespective of whether the

unit was intended for the management of solid and/or hazardous waste" (U.S. EPA, 1986). The SWMU definition includes containers, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, underground injection wells, waste water treatment units, recycling units, and areas contaminated by routine and systematic discharges from process areas. The 3008(h) authority applies to any release from an interim status TSDF. Other authorities under RCRA that apply include:

- o 3005(c) Permit Issuance

  Authorizes U.S. EPA, upon determination that a facility is in compliance with sections 3004 and 3005 of RCRA, to issue permits to TSDFs that have applied for such permits.

- o 3007 Inspections

  Permits U.S. EPA to enter, inspect, sample and examine records of any generator or TSDF for purposes of developing any regulation or enforcing the provisions of RCRA.

- o 3008(a) Compliance Orders

  In cases of a violation of Subtitle C- Hazardous Waste Management, this section authorizes U.S. EPA either to issue an order assessing a civil penalty and/or requiring compliance or to commence a civil action for appropriate relief.

- o Section 3013 Monitoring, Analysis, and Testing

  Provides authority to order a hazardous waste TSDF to perform monitoring, analysis, and testing at the site if there is a potential for a substantial hazard to human health or the environment. If the facility cannot perform the work, the U.S. EPA may either perform or authorize the state to perform the monitoring.

- o Section 7003 Imminent Hazard

  Authorizes U.S. EPA to bring suit to stop the handling, transportation, treatment, storage, and disposal of a solid or hazardous waste if an "imminent or substantial endangerment to health or the environment" is present. Also, other action as necessary may be taken.

1.2 RCRA Corrective Action Program

The RCRA Corrective Action Program based on the HSWA Authorities consists of three phases:

1. The RFA to identify releases or potential releases requiring further investigation

2. The RCRA Facility Investigation (RFI) to fully characterize the extent of releases

3. Corrective Measures (CM) to determine the need for and extent of remedial measures. This step includes the selection and implementation of appropriate remedies for all problems identified.

In particular, the intent of the RFA is to identify and gather information on releases at RCRA facilities, to evaluate solid waste management units for hazardous releases to all media, and to make preliminary determinations regarding releases of concern and the need for further actions and interim measures at the facility (U.S. EPA, 1986).

1.3 Scope of Project Work Completed to Date

At this writing, the PR, VSI, and SV for the Maytag Company Plant No. 2 have been completed. Review of previous sample analyses and sample data from the SV have been reviewed and incorporated into this report.

1.3.1 Preliminary Review of Maytag Plant No. 2

The PR of the Maytag Company Plant No. 2 involved reviewing both U.S. EPA Region VII files and Iowa Department of Natural Resources (IDNR) files pertaining to the landfill. Key documents which were reviewed include the following:

- Closure Plans
- Facility Inspection Reports
- Delisting Petition and associated documentation
- Miscellaneous Correspondence

These documents and other sources referenced in the text have been organized by author and date and included as an Administrative Record in Appendix A. These sources were utilized to gather information on the facility in order to identify and characterize potential releases and to focus the activities to be conducted in subsequent phases of the RFA.

1.3.2 Visual Site Inspection of Maytag Plant No. 2

The VSI portion of the RFA for Maytag Company Plant No. 2 involved a visit to the facility during which time all SWMUs and other areas of concern were inspected and photographed. Additionally, facility personnel were interviewed in an attempt to obtain additional information regarding past releases or the potential for a release. The VSI at Maytag Plant No. 2 was conducted June 15, 1987.

1.3.3 Sampling Visit at Maytag Plant No. 2

The SV portion of the RFA for the Maytag Plant No. 2 was conducted September 16, 1987. All samples collected by TES IV personnel were split with Maytag representatives; Terry Townsend and Ray Rusek. During this sampling activity; Jacobs Engineering Group conducted a safety audit regarding the TES IV, Tetra Tech personnel (TES IV, 6/26/87).

1.4 Purpose and Organization of this Report

The Maytag Company, Plant No. 2 RFA report is based upon the information obtained during the PR, VSI, and SV and includes the following areas:

- FACILITY DESCRIPTION - This section will include general information regarding the Maytag Plant No. 2 site location, size, operations and processes, current and past waste management practices, and regulatory history.

- ENVIRONMENTAL SETTING - This section will discuss the surrounding land use, physical geography, and geologic/-hydrogeologic setting of the Maytag Plant No. 2 site.

- DESCRIPTION OF THE SWMUs AND OTHER POTENTIAL AREAS OF CONCERN -This section will identify and describe the SWMUs including location, physical description, and waste characteristics. In addition, any areas of concern outside the regulated units will be addressed.

- DOCUMENTED OR SUSPECTED CONTAMINANT RELEASES AND MIGRATION PATHWAYS - This section will discuss any known or suspected contaminant release from the SWMUs and other areas of concern including data obtained during the SV. The known or potential release/migration pathway for each environmental medium is identified.

- EXPOSURE POTENTIAL RECEPTORS - This section will identify the potential or known human or environmental receptors for each release or potential release previously identified.

- CONCLUSIONS AND RECOMMENDATIONS - This section summarizes the findings of the PR, VSI, and SV and recommends whether additional work under the RCRA Corrective Action Program should be implemented at the Maytag Plant No. 2.

- ADMINISTRATIVE RECORD - As part of the RFA work assignment, Tetra Tech, Inc. has constructed an Administrative Record, organizing the U.S. EPA Region VII document file of the Maytag Plant No. 2. The Administrative Record is presented in Appendix A of this report.

2.0 FACILITY DESCRIPTION

2.1 General Information

The Maytag Company, located in Newton, Iowa, manufactures household appliances and household and commercial laundry equipment. Plant No. 2 which is located at the corner of East 8th Street and North 19th Avenue (Figure 2.1), produces clothes washers, clothes dryers, and dishwashers (Kesling, 6/4/81).

This facility has one NPDES permitted outfall (No. 001) and the discharge consists of treated wastewater from common metal (chromium and zinc) electroplating, painting (electro deposition and conventional spray application), sheet metal cleaning, porcelain enameling, and pickling operations (Cowles, 6/18/86). Other wastes generated at this facility include non-halogenated solvents, waste polymerized paints, paint sludges, ash residues from on-site incineration and waste water treatment sludges from electroplating operations. Currently this facility's RCRA status is as an Interim Status storage, treatment, and disposal facility (Leatherman, 6/24/85 and Hickok, 5/19/88).

2.2 Facility Operations

As stated above this facility assembles large appliances (dishwashers, clothes washing machines and clothes dryers). Some of the major operations necessary to complete this assembly include: metal melting and die casting, plating operations, grinding and shot blasting operations, painting and paint drying, and porcelain applications.

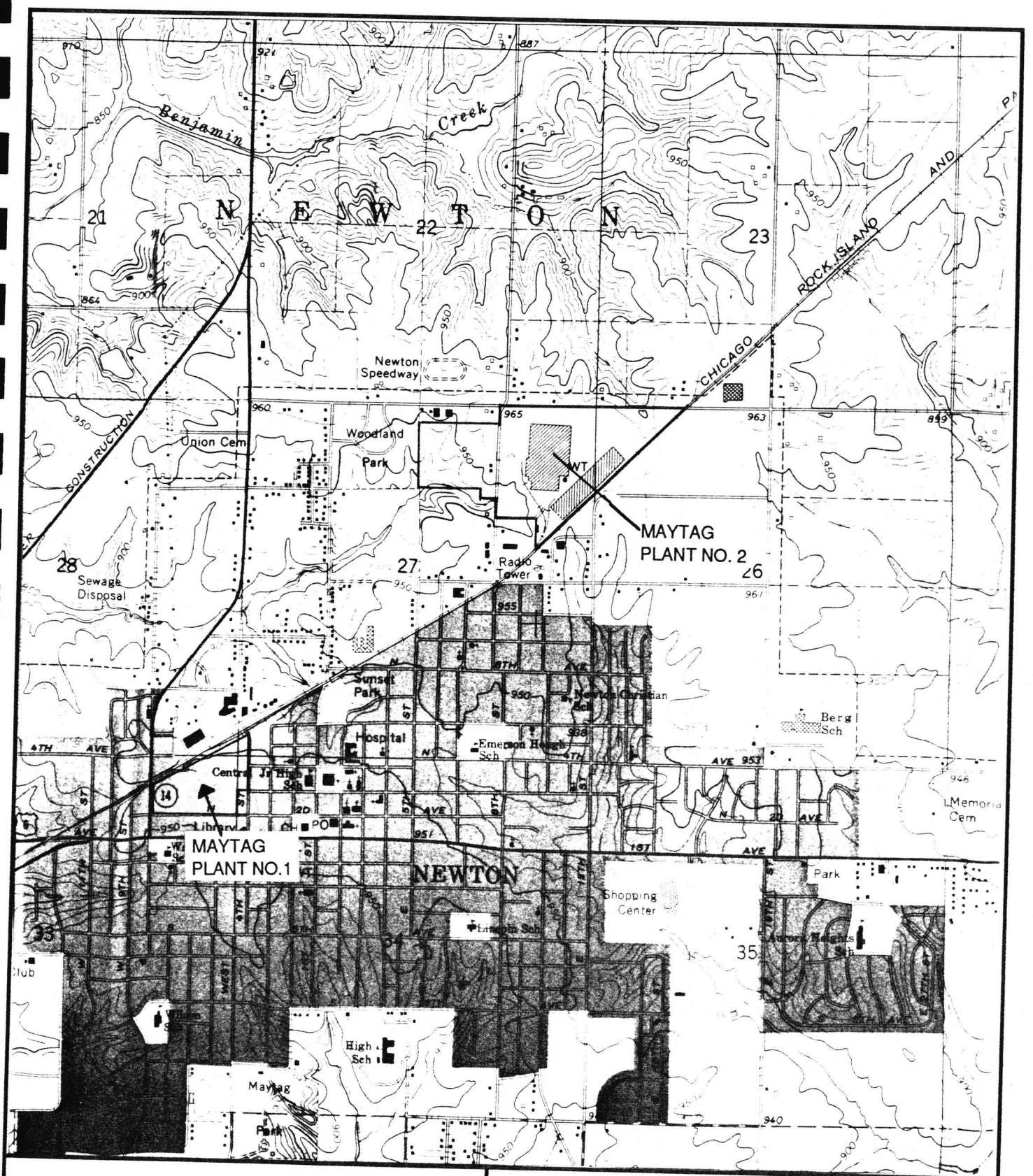
2.3 Waste Management Practices

Wastes generated at Maytag Plant No. 2 include: paper, wood, packaging materials, wastewater treatment effluent and sludge, used oil, parts cleaning solvents, paint waste, baghouse dust, scrap metal, and unused micro-biocite. A short description of the management of each of these waste streams follows.

Non-hazardous solid waste: Paper, wood, and packaging material waste are generated at Maytag Plant No. 2 by office workers and raw materials handling. These wastes are picked up daily and taken to the City of Newton Sanitary Landfill (Curry,7/18/86).

Waste water: Maytag Plant No. 2 operates its own wastewater treatment facility. In addition to waste received from electroplating, paint, porcelain, and sheet metal operations at the plant this treatment unit also receives alkaline wastes from Maytag Plant No. 1 also located in Newton, Iowa (10/9/86).

Effluent from the system (outfall No. 001) is regulated by a NPDES permit. Samples of the discharge are taken weekly and analyzed on-site for BOD, metals, pH, and suspended solids. In addition, the University of Iowa Hygienics Laboratory analyzes the waste for cyanide concen-



REFERENCE:
NEWTON QUADRANGLE
JASPER COUNTY
7.5 MINUTE
SCALE 1:24000
U.S. GEOLOGICAL SURVEY

SITE LOCATION MAP
MAYTAG PLANT NO. 2, NEWTON, IA.

PROJECT NO.	DATE	FIGURE NO.
3620-09	1965	2.1

tration, and oil and grease. These results are submitted monthly to the state and city (Curry, 7/18/86).

Sludge from the system was originally listed in Maytag's Part A application as a F006 waste. Maytag has since petitioned U.S. EPA to delist this waste. Under a temporary exclusion this material was piled in a bermed area that serves as a secondary containment for an above-ground storage tank for fuel oil. After approval of the delisting, Maytag began collecting the dewatered sludge in a bin located in Building No. 106 and now disposes of the sludge in the Newton Sanitary Landfill as it did prior to RCRA (Curry, 7/18/86 and Vlieger, 10/9/86).

Scrap metal: Production in Plant No.2 generates some scrap metal. This material is collected, baled, and shipped off-site for reclamation (Curry, 7/18/86).

Waste solvent: F001 spent halogenated solvents (tetrachloroethylene and 1,1,1-trichloroethane) are generated from degreasing and parts cleaning operations in various areas of the plant. The waste solvents are accumulated on the container storage pad for regular shipment off site to Safety Kleen for reclamation. Previous analyses of the wastes have shown them to contain a number of other solvents as minor contaminants. Maytag Plant No. 2 generates eight to ten barrels of this waste every three months (Vlieger, 10/7/86, and Maytag, 2/25/85).

Maytag uses non-halogenated solvents in solvent-based top coat paint operations including paint make-up, solvent line flush, and general cleanup. This solvent mixture is composed of 75 percent toluene and 25 percent methyl ethyl ketone (MEK), however, after use, other compounds are also present as minor contaminants. These include other solvents used in the paint formulations, diluted paint wastes, and sometimes small amounts of halogenated solvents.

An adhesive cleanup operation generates some ignitable waste. Solvents used are mineral spirits, naphtha, kerosene, etc. This material is stored on site (Vlieger, 10/7/86).

Paint waste: Painting at Plant No. 2 is done in water curtain spray booths. The paints used are white, almond, and wheat, and reportedly do not contain any lead or chrome. The resultant sludge from over spray is collected in 55 gallon drums and labeled as an ignitable waste (D001). These barrels are stored in interim storage areas around the waste treatment facility. According to inspection logs reviewed during a 1986 RCRA inspection there were 530 barrels of the ignitable waste stored around the waste treatment unit and another 89 barrels stored on the hazardous waste storage pad at the time of the inspection (Curry, 7/18/86 and Vlieger, 10/7/86).

Baghouse dust: Maytag uses a "Wheel-a-brator" to remove scale from firing equipment which is used to place porcelain parts onto for heat treating. The analysis on the dust collected from the Wheel-a-brator showed it to be EP toxic for cadmium (D006). Annual generation of this

waste is three to four 55 gallon barrels per year which are placed on the container storage pad (Curry, 7/18/86 and Vlieger, 10/7/86).

Waste oil: Used oil generated at Maytag is reclaimed and burned in an on-site boiler for energy recovery. The concentration of chlorinated solvents contained in this waste oil has been reported to be 379 ppm. Maytag generates and burns approximately 1,900 gallons of used oil each year (Curry, 7/18/86 and Vlieger, 10/7/86).

Plant No. 1 - Acid Waste: D002 alkaline wastes are generated at Maytag Plant No. 1 also located in Newton, Iowa. These wastes are generated from Alodine 1200 and Rubber Mold Cleaner operations. This waste is collected in a holding tank for subsequent shipment to Plant No. 2's wastewater treatment facility.

Micro-biocite: In the past Maytag had used a wood preservative (Micro-biocite) in their cooling tower. The Micro-biocite contains penta-chlorophenol and the unused portion is currently stored in a 55 gallon drum located on the storage pad. The waste is considered a F027 listed waste and had an accumulation date of August 1, 1983 (Curry, 7/18/86 and Vlieger, 10/7/86).

Cyanide: Prior to 1972, Maytag used cyanide in their electroplating operations. Maytag began reducing the cyanide used in this process in 1969 and by April 1972 had eliminated its use. Reportedly, all cyanide wastes were treated and disposed of at that time.

2.4 Regulatory Compliance History

The following is a chronological listing of the Maytag Company's compliance history with regard to Plant No. 2 in Newton, Iowa. A short summary of the findings of RCRA inspections are included as evidence of past waste management practices as they relate to the this plant.

Throughout this report, the Iowa Department of Natural Resources (IDNR), the Iowa Department of Water, Air, and Waste Management (IDWAWM), and the Iowa Department of Environmental Quality (IDEQ) all refer to the same agency during different time periods. This agency is currently known as the Iowa Department of Natural Resources (IDNR) and will be referred to as such, except when referring to specific time periods.

November 17, 1980: The Maytag Company notified and submitted a Part A application and subsequently received their interim status as a TSD facility in operation before November 1980 (Curry, 7/18/86).

November 26, 1980: The Maytag Company petitioned the U.S. EPA to amend Subpart D of Part 261 to exclude the sludge generated by the Maytag Wastewater Treatment Plant from the list of hazardous wastes; additionally, request was made that a temporary exclusion be granted before making a final decision under Section 260.20(d).

Justification for this exclusion was twofold:

1. F006 (electroplating) wastes are considered by the U.S. EPA to be toxic due to the presence of cadmium, chromium, nickel, and complexed cyanide.

   The plant's wastes did not contain cyanide because plating operations had not included cyanide since April 1972. Cadmium, hexavalent chromium, and total chromium in the extract from the sludge was below the maximum concentration allowed for the characteristics of EP Toxicity. EP Toxicity characteristics do not list an acceptable nickle concentration, but Maytag's position was that the nickel concentrations found in the sludge extract were within acceptable concentrations.

2. K063 wastes were considered by the U.S. EPA to be toxic due to the presence of chromium and lead.

   The concentrations in the extract from Maytag's sludge were below the maximum concentrations.

The sludges, for which Maytag requested this delisting, are formed in the plant's on-site Wastewater Treatment Plant during the treatment of water from the electroplating, paint, porcelain, and sheet metal departments (Maytag, 11/26/80).

U.S. EPA recommended that it would be to Maytag's advantage to reduce the nickel content listed in the November 26, 1980 delisting petition to below 10.0 mg/l. Maytag found that such a reduction could be achieved by modifying the Waste Treatment operations. On March 26, 1981, Maytag made this amendment to the delisting petition. They had produced a sludge in which the mean and upper confidence level values of nickel in the extract from the EP Toxicity Test are below 0.50 mg/l. The modification involved the addition of hydrated lime, in a slurry form, to the sludge settling tanks while the sludge is being agitated, to form a homogeneous dispersion throughout the sludge matrix. The sludge is then vacuumed filtered.

May 10, 1981: The U.S. EPA granted a temporary exclusion to Maytag Plant No. 2, allowing the Maytag Company to dispose of the specified wastes as non-hazardous, until the U.S. EPA could finalize the exemption.

May 29, 1981: IDNR evaluated chemical analyses received from Maytag against the Department's Cation Downward Leakage Model. IDNR determined that the sludge could be disposed of at the City of Newton Landfill. A Special Waste Authorization (SWA) was granted for 258 tons/month for the period of May 30, 1981 to June 1, 1982 (IDWAWM, 5/1/85).

June 4, 1981: IDEQ issued an NPDES permit for outfall 001 at Plant No. 2.

August 12, 1982: A renewal SWA was granted by SWA No. 5001081282. Within the SWA it was noted that this waste was identified by RCRA as hazardous waste F006 but that since it had been temporarily excluded by EPA and evaluated by Cation Downward Leakage Model the renewal was granted for 187.5 tons/month. The permit period was July 23, 1982 to June 1, 1983 (IDWAWM 5/1/85).

January 1983: An amended Part A application stated that the surface impoundment, identified in the original Part A application of November 17, 1980, was incorrectly identified and should be classified as a waste pile. This waste pile contained F006 sludge for which the U.S. EPA granted a temporary exclusion from regulation on January 24, 1983.

April 11, 1984: IDWAWM conducted an inspection of Maytag Plant No. 2. The report recommended the following: inspections of the storage area be increased to a daily frequency to comply with Interim Status Requirements until closure, accumulation dates should be added to barrels, identification of both hazardous and non-hazardous waste barrels should be insured, and the storage capacity of the hazardous waste storage pad should not be exceeded (Curry, 7/18/86).

September 13, 1984: IDWAWM conducted a RCRA inspection as a follow-up to the April 11, 1984 inspection at Plant No. 2. This report indicated that the incinerator had been electrically disconnected and that no residues were left in the storage tanks near the incinerator. It was also noted that adequate aisle space was not being maintained on the container storage pad (Curry, 7/18/86).

February 25, 1985: Maytag requested in a letter sent to U.S. EPA Region VII that Maytag Plant No. 2 be removed from interim status and stated that a closure plan would be submitted in lieu of a Part B application. This decision was later rescinded by Maytag since Plant No. 2 receives alkaline waste from Plant No. 1.

April 14, 1985: Eugene A. Hickok and Associates submitted on behalf of the Maytag Company a Closure Plan for the incinerator and container storage pad.

May 1, 1985: An IDWAWM internal memo noted that Maytag Plant No. 2 had not applied for renewal of their SWA for disposal of wastewater treatment sludge until March 4, 1985 (see August 12, 1982). IDWAWM assumed that Maytag had continued disposing of this waste in a landfill during this time period (IDWAWM 5/1/85).

May 9, 1985: IDWAWM transmitted their comments regarding Maytag's Closure Plan to U.S. EPA Region VII.

June 7, 1985: IDWAWM conducted a RCRA inspection noting that closure of the incinerator and long term storage facility had been delayed pending approval of Maytag's Closure Plan by the U.S. EPA (Curry, 7/18/86).

October 15, 1985: The Maytag Company submitted a petition to IDWAWM to exclude from regulation the F006 sludge generated by its wastewater treatment plant. In spite of the delisting petition submitted to U.S. EPA and the subsequent temporary exclusion, this was not sufficient to delist the waste as an Iowa hazardous waste. The IDWAWM delisting became effective July 23, 1986.

March 26, 1986: A. T. Kearney Management (U.S. EPA consultant) submitted comments on Maytag's Closure Plan to U.S. EPA Region VII. Kearney considered the Closure Plan to be deficient in all areas and specifically noted that the facility must undertake a program to completely define the aerial extent of contamination around all waste handling units.

June 6, 1986: U.S. EPA performed a RCRA inspection and several violations were addressed. This inspection specially noted that there were 530 barrels of paint sludge stored on site and that inadequate aisle space was being maintained.

June 18, 1986: A Performance Audit Inspection of the Maytag Company was conducted by U.S. EPA Region VII; this work included an inspection of the wastewater treatment facility at Plant No. 2. A 24-hour composite sample was collected at outfall 001 for bioscreen and priority pollutant analyses. Analytical results of the bioscreen sample showed the 001 effluent as positive (toxic). Priority pollutant results were not yet available. Follow-up of this determination was not found during the course of the RFA.

August 8,1986: Comments from U.S. EPA regarding the April 1985 Closure Plan were sent to the Maytag Company.

November 1986: Final delisting of the F006 sludge was granted by U.S. EPA and published in the Federal Register.

June 15, 1987: TES IV personnel, representing the U.S. EPA Region VII conducted the VSI portion of a RFA.

September 16, 1987: TES IV personnel conducted a SV at Maytag Plant No. 2 in Newton, Iowa.

March 17, 1988: U.S. EPA, in a letter to Maytag, stated that they had not approved the April 1985 Closure Plan since it did not fully comply with all the closure requirements or other requirements in 40 CFR Part 265. Additionally, Maytag was advised that the Closure Plan must satisfy the regulations specific to closure of tank storage units.

May 19, 1988: The Closure Plan for RCRA Facilities at the Maytag Company Plant No. 2 was submitted by Eugene A. Hickok and Associates. This Closure Plan included the incinerator, interim container storage areas, the former waste pile, and the underground storage tank.

June 13, 1988: The Maytag Company received tentative approval of the Closure Plan for all regulated hazardous waste management units for which a permit will not be sought from U.S. EPA Region VII.

3.0 ENVIRONMENTAL SETTING

3.1 Surrounding Land Use

Maytag Plant No. 2 is located on the northern edge of Newton, Iowa. There are residences to the south and west of the plant. Also to the south are some small commercial operations.

3.2 Physical Geography

Jasper County is located in the central part of Iowa. The topography of this area is nearly level to hilly, with a major portion of the area made up of loess covered uplands. The land surface elevation of the Maytag Plant No. 2 area ranges from 940 to 960 feet above mean sea level, the land surface slopes toward the southwest.

According to the Jasper County Soil Survey, the general soil association for the Newton area is the Tama-Killduff-Muscatine series, which is 40 percent Tama soils, 16 percent Killduff soils, 11 percent Muscatine soils and 33 percent minor soils. Tama and Killduff soils are composed of silty clay loams which extend to a depth of five feet below ground surface. The Tama soil is well drained whereas the Killduff soil is moderately well drained (Soil Survey, 3/79).

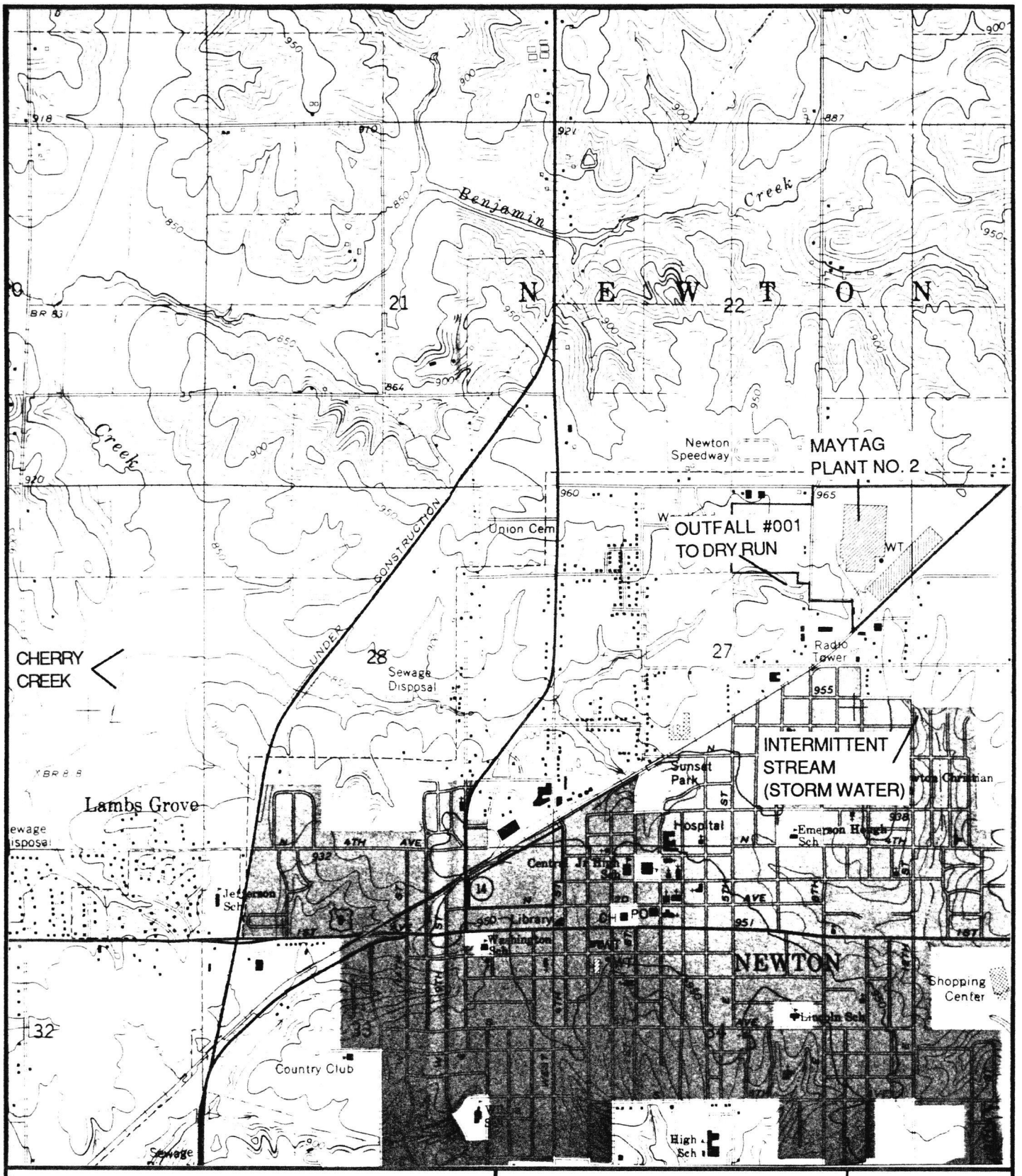
The Maytag Plant No. 2 is located specifically on the Muscatine series soil which is composed of a silty clay loam and extends to a depth of six feet below ground surface. Surface runoff is slow due to a 0.0 to 2.0 percent slope and the soil is wet for short periods. The soil is moderately permeable (0.6 to 2.0 inches per year), somewhat poorly drained and susceptible to frost action. The depth to the seasonably high water table is 3.0 to 5.0 feet (Soil Survey, 3/79).

The engineering properties of the Muscatine series indicate that this soil has medium to low shear strength, medium compressibility, low to medium susceptibility to piping and fair to good compaction characteristics (Soil Survey, 3/79).

The unified soil classification of the Muscatine series is CL, indicating organic silts and organic silty clays of low plasticity. The liquid limit is 35 to 50 percent and the plastic limit is 15 to 35 percent (Soil Survey, 3/79).

3.3 Surface Water

Surface water runoff from Plant No. 2 appears to flow into one of two intermittent streams draining the facility property (Figure 3.2). Effluent from outfall 001 is released to a dry run west of the facility. This dry run flows into Cherry Creek located approximately two miles



REFERENCE:
NEWTON QUADRANGLE
JASPER COUNTY
7.5 MINUTE
SCALE 1:24000
U.S. GEOLOGICAL SURVEY

AREA TOPOGRAPHY
MAYTAG PLANT NO. 2, NEWTON, IA.

PROJECT NO.	DATE	FIGURE NO.
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west of Plant No. 2. Cherry Creek is a tributary of the South Skunk River which drains most of Jasper County. The South Skunk River is classified as B(w); class "B" waters are to be protected for wildlife, fish, aquatic, and semiaquatic life and secondary contact water uses (NPDES, 1/13/84).

Jasper County falls within the Iowa Geological Survey Region 5 for regional flood patterns. Region 5 has the lowest magnitude floods in the state. It covers the northern portion of the Des Moines lobe where most of Iowa's natural lakes occur. The nearby level topography, scattered lakes, and undrained depressions have an attenuating effect on flood magnitude (Anderson, 1983).

3.4 Geology/Hydrogeology

To date neither the Maytag Company or E. A. Hickok and Associates have conducted a site specific investigation of the geology/hydrogeology of the plant site. Initial Closure activities currently in progress should eventually provide this information, however, at this writing this information is not available. A search of available information of the regional geology/hydrogeology of this area by TES IV personnel yielded limited information.

Geology - Unconsolidated material in the Newton area is primarily Quaternary Age alluvium and drift composed of gravel, sand and clay. The thickness of the overburden ranges from 100 to 150 feet. The bedrock underlying the unconsolidated rock is composed of cyclic deposits of shale, sandstone, thin limestone and coal. The rock units are Pennsylvanian Age and belong to the Cherokee Group of the Des Moines series. The bedrock thickness ranges from 50 feet to 100 feet in the Newton area (Twenter, 1965).

Hydrogeology - The surficial aquifer in the Newton area is a drift aquifer known to occur in upland areas where materials were deposited primarily by glaciers. The capacity of the drift aquifer to store and transmit water is limited due to the random distribution of the gravel, sand silt and clay comprising the aquifer (Twenter, 1965).

The City of Newton's water supply is from an alluvial aquifer in the South Skunk River floodplain. The alluvial aquifer is composed of various amounts of clay, silt, sand and gravel deposited by the Skunk River. The sands and gravels yield large quantities of water readily recharged by water from precipitation and runoff. The thickness of the alluvial aquifer is approximately 50 feet. The City well field is located 5.5 miles southwest of the Maytag Plant No. 2 and consists of twenty alluvial wells that have estimated well yields of 600 gpm each (Twenter, 1965).

3.5 Meteorology

The climate in Newton has been characterized as midcontinental and subhumid with variable seasons. The average annual high temperature is

61° F and the average annual low temperature is 40° F. The average annual precipitation is about 33 inches. June is the wettest month followed by May, July, and August. About 75 percent of the warm season rainfall occurs as showers, some heavy enough to cause erosion.

Winter is moderately long and cold, with daily temperatures averaging 23° F. The average seasonal snowfall is five inches and an average of 60 days per year have at least 1.0 inch of snow cover. Snowfall extends into the early spring and late fall seasons.

Spring is normally cool with a daily average temperature of 49° F. The average total precipitation is 3.1 inches. Summer months are warm and daily temperatures can range from 61° to 97° F. The average total precipitation for the summer months is 4.1 inches.

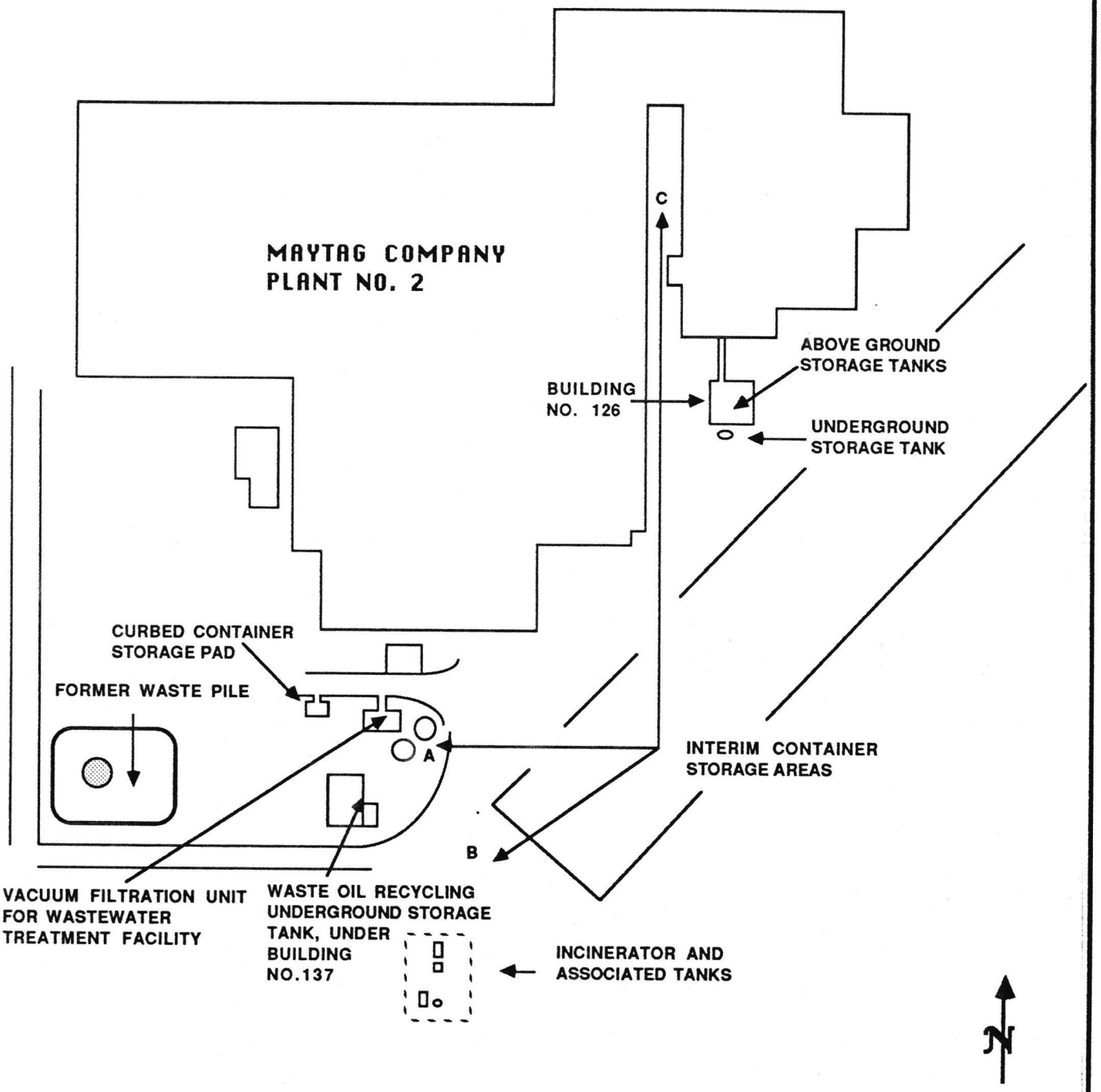
The fall months are mild with occasional periods of rain and snowfall. Snowfall occurs towards the end of the season. The average daily temperature will range from 78° F in early fall to 29° F in late fall. Average wind velocities and direction for Newton are expected to be similar to the Des Moines area (20 miles to the west-southwest). Average velocity for Des Moines is 10.9 mph with the prevailing wind direction slightly favoring the northwest (Soil Survey, 3/79 and USDA, 1988).

4.0 SUMMARY OF SWMUS AND OTHER POTENTIAL AREAS OF CONCERN

Of the eight SWMUs at Plant No. 2, four units are inactive and a Closure Plan has been prepared by E. A. Hickok and Associates. This closure plan includes the incinerator and associated tanks, three interim container storage areas, an underground hazardous waste storage tank and a former waste pile. In the original 1985 Closure Plan Maytag also included the concrete slab container storage area, however, since that time Maytag has decided to use this area as a permitted storage area and has removed it from closure activities.

Besides the concrete slab container storage area there remain three other active SWMUs. These include an underground storage tank associated with the waste oil recycling operation, sludge resulting from wastewater treatment on site, and two above ground tanks used to store waste solvents prior to being shipped off-site for reclamation.

Figure 4.0 shows the locations of the SWMUs while Table 4.0 summarizes the known information regarding these SWMUs.



REFERENCE:
DRAFT RFA REPORT FOR
MAYTAG PLANT NO. 2
TES IV
TETRA TECH, INC.
SEPTEMBER 1988

SWMU LOCATION MAP
MAYTAG PLANT NO. 2, NEWTON, IA.

PROJECT NO.	DATE	FIGURE NO.
3620-09	SEPT. 1988	4.0

TABLE 4.0 SWMU SUMMARY

SWMU OR AREA OF CONCERN	CONTAINER AND INTERIM CONTAINER STORAGE	ABOVEGROUND TANKS	WASTEWATER TREATMENT FACILITY	WASTE OIL RECYCLING-UNDERGROUND TANK	INCINERATOR	UNDERGROUND STORAGE TANK	FORMER WASTE PILE
UNIT TYPE	STORAGE	STORAGE	TREATMENT	TREATMENT	TREATMENT	STORAGE	STORAGE
NUMBER OF UNITS	1 PERMANENT 3 INTERIM	2	1	1	1	1	1
WASTES HANDLED	D001, F001, NON-HAZARDOUS WASTES, WASTES CONTAINING APPENDIX VII CONSTITUENTS D001 PAINT SLUIDGE	WASTE PAINT FLUSH SOLVENT	WASTES FROM ELECTROPLATING, PAINT, PORCELAIN, AND SHEET METAL OPERATIONS AND ALKALINE WASTES	WASTE OIL CONTAINING CHLORINATED SOLVENTS	WASTE PAINT FLUSH SOLVENT	WASTE PAINT FLUSH SOLVENT WASTE FLUSH SOLVENT	F006 SLUDGE
CAPACITY	240-55 GALLON DRUMS VARIABLE	4,580 GALLONS EACH	SLUDGE-APPROX. 258 TONS/MONTH	10,080 GALLONS STORAGE	20 GALLONS/HOUR	400 GALLONS	518 TONS
PERIOD OF OPERATION	1982-PRESENT ?-PRESENT	1967-PRESENT	1954-PRESENT	1973-PRESENT	1961-1981	1967-1984	NOV. 1980-JULY 1981
STATUS	ACTIVE UNDERGOING CLOSURE	ACTIVE	ACTIVE	ACTIVE	UNDERGOING CLOSURE	UNDERGOING CLOSURE	UNDERGOING CLOSURE

5.0 CONTAINER AND INTERIM CONTAINER STORAGE AREAS

5.1 Unit Characteristics

The container storage area was built in 1982 to handle both hazardous and non-hazardous waste items. The container storage area consists of a 29.5 ft. by 27 ft. concrete slab which is sloped at 1/4 inch per foot to a sump pit used to collect runoff (Figure 5.1). The storage area is surrounded on three sides by a six-inch curb to reduce the possibility of runoff. Rainwater runoff is collected in the sump, analyzed for contamination and then discharged manually through a gate valve to a four-inch storm sewer (Maytag, 4/25/85, and Hickok, 4/85). This unit provides storage for 240 drums. In addition to this space, drums are also stored in three interim container storage areas described below:

a. Area A Interim Container Storage Area

The interim container storage area addressed in E.A. Hickok and Associates' October 7, 1986 response to U.S. EPA Region VII and designated as Area A, is located near the on-site treatment clarifiers adjacent to Building No. 106 (Figure 4.0). This area is a gravel area approximately 90 ft. by 10 ft. This area is used to store drums of paint sludge generated during painting operations.

b. Area B Interim Container Storage Area

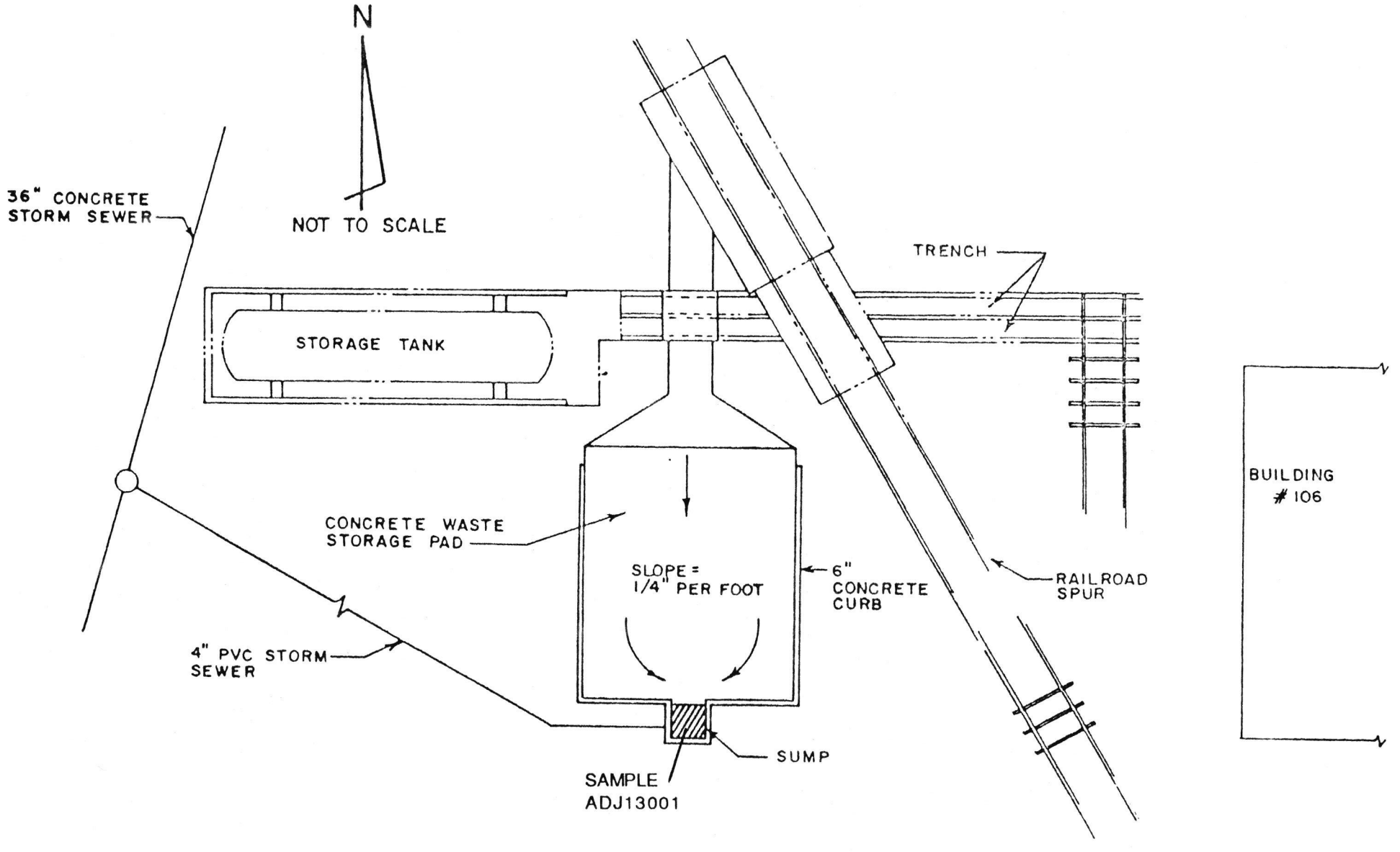
The interim container storage area designated Area B, is an additional area that has been used to store waste paint sludge generated from facility operations. The area is located in an asphalt parking area between Building No. 111 and 121 (Figure 4.0) measuring approximately 10 ft. by 80 ft. Drums of waste paint sludge are no longer stored in this area.

c. Area C Interim Container Storage Area

The interim container storage area designated Area C, is also an additional area used to store drummed waste paint sludge generated from facility painting operations. This area is located in a graveled alley between Building No. 123, 130, 142, and 143 (Figure 4.0). Drums of waste paint sludge are currently being stored in this area (Hickok, 5/19/88).

5.2 Waste Characteristics

Wastes stored in the container storage area consist of ignitable liquid wastes, polymerized paint from an incinerator tank, and paint sludge from the incinerator tanks, all of which exhibit the characteristics of a D001 waste. Spent 1,1,1-trichloroethane and tetrachloroethylene (F001 wastes) are stored in this area for less than 90 days before they are shipped off-site for reclamation. Incinerator ash is also stored in this unit and non-hazardous wastes containing 40 CFR Section 261



MAYTAG CLOSURE PLAN

MAYTAG PLANT #2 WASTE STORAGE AREA

E.A. HICKOK & ASSOCIATES
HYDROLOGISTS-ENGINEERS
MINNEAPOLIS-MINNESOTA

MAR. 1985

2

FIGURE 5.1 Container Storage Area

Appendix VIII constituents have been stored in this unit in the past (Maytag, 4/25/85).

5.3 Status of Unit

There have been three documented spills or leaks on the drum storage pad. One incident (December 1984) involved a small amount of liquid and did not result in waste reaching the sump. The waste was cleaned up and repacked in a new drum. The first (May 15, 1984) and third (September 29, 1986) incidents involved liquid wastes. The May 1984 release involved the loss of approximately five gallons of a D001 waste. Leakage was collected in the waste collection sump and was returned to a new drum. There is no indication according to Maytag's records that any waste escaped the sump in any of these incidents (Vlieger, 10/7/86).

During the September 1987 SV a sediment sample was collected from the sump in which runoff from the drum storage pad is collected. This sample was collected to determine if a release from drummed wastes had occurred in the past and presented the potential for release from the unit. This sample was analyzed for total metals and volatile organics. Measurements with a PID were not taken due to steady rainfall during collection of this sample (McKee, 8/24/87 and 9/16/97).

Sample No. ADJ13001 was collected from an area measuring 3 ft. by 3 ft. by 4 ft. high and at the time of sampling contained approximately one foot of water underlain by 0 to 2 inches of sediment. Analysis for volatile organics did not reveal any significant levels of contaminants. However, data received for metals indicated that chromium, lead, and barium were detected.

Parameter	Sample ADJ13001
Barium	0.86 mg/kg
Chromium	0.20 mg/kg
Lead	0.45 mg/kg

5.4 Documented/Suspected Contaminant Releases/Migration Pathways

5.4.1 Air Release/Migration Pathway

Due to the volatile nature of some of the wastes (i.e. waste solvents) stored in this area, there is always the potential for a release due to a spill or leak, or the improper maintenance of the drums being stored. Regular (daily) inspection of the area and proper containment action should reduce the significance of any air release associated with this SWMU.

5.4.2 Surface Water Release/Migration Pathway

As noted by the results of the SV discussed in Section 5.3, a release of contaminants to surface water is the most likely

release to occur. Since inadequate details exist, it is impossible to determine whether the contamination found is the result of inadequate clean up or from an unreported release.

5.4.3 Groundwater Release/Migration Pathway

Due to conditions at the site during the SV (i.e. standing water and sediment and weather conditions), it was not possible to fully evaluate the integrity of the concrete sump for cracks. In spite of the relative newness of this unit (1982), the apparent high water table could cause earlier deterioration of this unit than would otherwise be expected.

Two of the three interim storage units are located on graveled areas and present little protection from the high water table. Area B, situated on an asphalt area, provides some protection depending on the overall condition of the area.

5.4.4 Soil Release/Migration Pathway

A high potential for a release to soil from any of the interim container storage areas exist due to the lack of secondary containment and in the case of two of the areas nothing more than a gravel base. Migration would be limited somewhat by the mobility of the contaminant, paint sludge, once in contact with the soil.

5.4.5 Subsurface Gas Release/Migration Pathway

The potential exists for the release of a subsurface gas from the sump of the container storage area since this sump is connected to a four-inch diameter storm drain. A subsurface gas release from any of the interim container storage areas is unlikely unless storm drains or some other conduit is situated nearby.

5.4.6 Exposure Potential

Currently, it is known that releases have occurred on the container storage pad on at least three separate occasions. Sample data have indicated that low levels of contaminants exist in the sediment of the sump. However, it is unknown whether these contaminants are the result of inadequate cleanup and do not pose a significant threat to the surface water migration pathway, or if these levels are the residual contaminants of a significant release. All this material should be removed and properly disposed of and in the future periodic removal of sediments should take place to prevent a buildup of material susceptible to contamination.

Secondarily impacted would be the groundwater. Lack of secondary containment in the Interim storage areas and the close proximity of groundwater to the surface makes the potential for a release of this type much higher. The Maytag Company could significantly

reduce the risk of a release from the three Interim units if paint sludge was solidified in the drums during collection inside the plant. Although this is considered a treatment process and would require an amendment to Maytag's Part B application storage concerns would be greatly reduced.

6.0 ABOVE GROUND STORAGE TANKS

6.1 Unit Characteristics

Two tanks are currently used for less than 90 day storage of Paint Department flush solvent. These tanks which were installed in 1967 are made of mild steel and are unlined; additionally, they are elevated two to three feet above the floor. These tanks have a capacity of 4,850 gallons each, and are located in Building No. 126 (Figure 4.0) (Maytag, 4/25/85).

6.2 Waste Characteristics

The Paint Department flush solvent stored in these two tanks is a mixture of MEK, toluene, and paint and exhibits the characteristics of a D001 waste. This material is recycled off-site, repurchased, and reused by Maytag (Maytag, 4/25/85).

6.3 Status of Unit

Very little information is available regarding this unit; it is known according to U.S. EPA files that Maytag has surpassed the 90 day storage limit for these two tanks on two separate occasions. It should also be noted that an IDWAWM inspection in April 1984, found "some seepage (from the tanks) had been noticed and corrected..." (Leatherman, 4/24/84).

6.4 Documented/Suspected Contaminant Releases/Migration Pathway

6.4.1 Air Release/Migration Pathway

Due to the nature of this SWMU it is unlikely that a release to air would occur except during transfer operations or development of a leak in one of the tanks. Any release during transfer operations should be minimal unless a spill occurred. Also since the tanks are elevated above the floor, any leaks that might develop in the tanks should be immediately evident. Notice of any leakage of this sort should not go unnoticed for long since these tanks are one of the checkpoints for the night watchman. A release of any size should be immediately cleaned up and the area ventilated due to the ignitable nature of this waste stream.

6.4.2 Surface Water Release/Migration Pathway

The two tanks representing this SWMU are located in Building No. 126 in a separate room several feet lower than the main section of

the building. Although an adjacent room is at an even lower elevation, containment of any leaks should not present the potential for a surface water release.

6.4.3 Groundwater Release/Migration Pathway

Due to the confinement provided by the building and the manner in which the waste is stored, a groundwater release would be unlikely from this SWMU.

6.4.4 Soil Release/Migration Pathway

Due to the confinement provided by the building and the manner in which the waste is stored, a soil release would by unlikely from this SWMU.

6.4.5 Subsurface Gas Release/Migration Pathway

Due to the manner in which the waste is stored, a subsurface gas release would be unlikely from this SWMU.

6.4.6 Exposure Potential

As previously mentioned leakage from at least one of these tanks has been noted in the past. The age of these two tanks (21 years) should be of concern, especially since neither is lined and continued precautionary measures should take place. Additionally Maytag should begin plans to phase this unit out and replace it, prior to failure of the unit due to its age. Should a significant release occur, it should be noticed almost immediately since this building is occupied during working hours and the tanks are part of an hourly key check by the night watchman.

Based on this, a spill should be easily contained and the greatest exposure hazard would be to workers performing cleanup. These wastes are listed as D001 (ignitable) and precautions to reduce any chance of fire must be observed.

7.0 Wastewater Treatment Facility

7.1 Unit Characteristics

The wastewater treatment facility at Plant No. 2 was constructed in 1954 and until 1983 only pretreated wastewater, discharging effluent directly to the Newton sewage system. In July 1983 Plant No. 2 began discharging directly to the receiving stream; a dry run to Cherry Creek (IDNR, date unknown).

The effluent from this system is regulated under a NPDES permit and therefore would not be subject to this RFA, however, the sludge resulting from this treatment unit is stored on-site prior to disposal and that portion of the treatment facility is considered a SWMU.

Overall Waste Treatment operations consist of the reduction of hexavalent chromium to trivalent chromium, neutralization of acid and alkaline wastes, flocculation, chemical precipitation, sedimentation, and vacuum filtration of the sludge. Water-based anodic and cathodic electrocoat paint wastes and alkaline sludge from the paint hanger stripper are treated in this system. Water from the oil recycling process is also introduced into the Waste Treatment process after demulsification with heat and sulfuric acid. Chemicals used in the Waste Treatment operations include: sulfur dioxide, hydrated lime, aluminum sulfate, polyelectrolyte, calcium hypochlorite, sodium bisulfite, sulfuric acid, sodium hydroxide, and expanded perlite filter aid (sodium potassium-aluminum silicate) (Maytag, 11/26/80 and IDWAWM, 1/13/84).

As previously stated, the receiving stream is a dry run to Cherry Creek which in turn is a tributary to the South Skunk River. The system has the ability to shut the discharge down if the final discharge monitored for pH or suspended solids exceeds the permit limitations. An average of 46,000 gallons per day is discharged to the sanitary sewer, 487,000 gallons per day are discharged via the NPDES permitted outfall, and the remainder of the water is recirculated for reuse in the plant (IDNR date unknown, and Maytag, 4/25/85).

The wastewater sludge is pulled off the bottom of the clarifier and is the consistency of a stiff paste, containing 30 percent solids, and is light brown in color. The sludge is decanted, vacuum filtered and placed in a dumpster to be hauled to the Jasper County Sanitary Landfill (Figure 4.0). The wastewater sludge contains concentrations of heavy metals; however, it has been delisted by the EPA from being a hazardous waste since after treatment it no longer meets the criteria for which it was originally listed (Section 2.4). IDNR has also determined that the waste should be excluded as a hazardous waste and has issued a Special Waste Authorization for continued disposal of this sludge at the county landfill (IDNR unknown date, and Maytag, 11/26/80).

7.2 Waste Characteristics

Wastes from several departments make up the total waste stream treated in this unit, and include hazardous wastes exhibiting the characteristics of corrosivity (D002) and EP Toxicity (D007) as well as wastes which contain hazardous constituents. A brief description of each of these individual waste streams is included below.

Wastes from the **electroplating department** are generated by cleaning, pickling, nickel flash, zinc plating, and chromium plating operations. Wastes contributed from these operations are silicated alkaline cleaners, hydrochloric acid, nitric acid, sulfuric acid, nickel sulfate, zinc, chromates, brighteners, and wetting agents (Maytag, 11/26/80).

Wastes from the **sheet metal department** are generated by cleaning and dry coating operations. These operations generate silicated alkaline

cleaners, nitrites, phosphates, soaps, oils, and greases (Maytag, 11/26/80).

Wastes from the **porcelain department** are generated by cleaning, pickling, nickel flash, ground coat and cover coat operations. These operations generate silicated alkaline cleaners, sulfuric acid, nickel sulfate, iron sulfate, bentonite, clays, titanium dioxide, zirconium oxide borax, potassium carbonate, potassium nitrite, silica, and metal oxides (Maytag, 11/26/80).

Wastes from the **paint department** are generated by cleaning, zinc phosphatizing, water-based primer (electrocoat) application, water from water curtain spray booths for the application of solvent-base top coat, and alkaline hanger stripper operations. These operations generate alkaline cleaners, zinc, phosphates, nickel, chrome, phosphoric acid, nitrites, alkaline sludge from the hanger stripper, cathodic and anodic electrocoat solutions containing pigment resins, diisopropanolamine, butyl cellosolve, mineral spirits, and hexyl cellosolve (Maytag, 11/26/80).

7.3 Status of Unit

As discussed in Section 2.4, a Performance Audit Inspection showed effluent being discharged to outfall 001 to be positive (toxic) for the bioscreen analysis. During the September 1987 SV, two samples were collected downstream of outfall 001 (Figure 3.2) to determine if contamination from inadequate treatment of facility wastes had been released off site.

Sample No. ADJ13007, a sediment sample consisted of a composite sample of sediments collected at five foot intervals from the point of discharge of outfall 001 to a point 50 feet downstream. This sample was analyzed for total metals and volatile organics. Review of the data did not indicate any significant levels of contaminants (Appendix B).

Sample No. ADJ13010 was a water sample from the discharge point; analyses of this sample did not find any significant levels of contaminants either (Appendix B).

7.4 Documented/Suspected Contaminant Release/Migration Pathway

7.4.1 Air Release/Migration Pathway

The primary wastes being treated in this unit are metals, acids, and bases, and are not of a highly volatile nature. Therefore, the likelihood of a significant air release is low.

7.4.2 Surface Water Release/Migration Pathway

All liquids drawn from the sludge during vacuum filtration are cycled back into the treatment system and provide little potential for release.

Additionally, proper operation and maintenance of limits established for Maytag's NPDES permit should be designed to prevent the escape of untreated contaminants in the effluent.

7.4.3 Groundwater Release/Migration Pathway

The vacuum filtration unit is housed in Building No. 137 and presents little opportunity for a groundwater release.

7.4.4 Soil Release/Migration Pathway

Due to the nature of the SWMU and the characteristics of the waste involved, it is unlikely that a release to the soil would occur.

7.4.5 Subsurface Gas Release/Migration Pathway

Due to the nature of the SWMU and the characteristics of the waste involved, it is unlikely that a subsurface gas release would occur.

7.4.6 Exposure Potential

The primary route of exposure from this unit would be a surface water release to outfall 001 which is monitored through Maytag's NPDES permit. Monitoring of daily operations at a treatment facility such as this should provide early warning of an upset in the system that could lead to a release. Exposure from this unit would be expected to be minimal and the practices currently in place appear to be adequate to address this potential.

8.0 WASTE RECYCLING OPERATION

8.1 Unit Characteristics

Used oil, containing chlorinated solvents, generated at Maytag is reclaimed and burned for energy recovery on site. To accomplish this, Maytag uses a waste oil reclamation process which splits the emulsion in soluble oils and separates the oil in oil/water mixtures. The oil is then pumped to the powerplant and burned in a boiler to produce steam; the water portion of this waste stream is routed to the wastewater treatment plant for final treatment. Maytag generates and burns about 1,900 gallons of used oil each year (Maytag, 4/25/85 and 10/9/86).

This unit is fourteen years old and consists of three tanks including an underground tank with two sections, each having a capacity of 10,080 gallons (Figure 4.0). One section is used as a receiving tank for the waste material while the other section is used as a holding tank for reclaimed oil. The emulsions are split in a 5,800 gallon above ground tank with heat and sulfuric acid and decanted in a 4,400 gallon above ground tank with a conical bottom. Both these tanks are housed in a curbed area inside Building No. 137 (Maytag, 4/25/85).

The only area observed that indicated any evidence of past release is the point where the oil is discharged from the truck bringing the waste oil from the plant into the underground holding tank. Maytag is aware of the spillage in this area and so far it appears has limited release to the concrete pad surrounding this drain. During the SV, TES IV personnel were told that additional measures (improved curbing) to secure the area from potential releases were to be implemented soon (McKee, 9/16/87).

8.2 Waste Characteristics

The concentration of chlorinated solvents in the waste oil has been reported to be 379 ppm. The total chlorine in the sample was 9,500 ppm. Maytag has reported the reason for the high chlorine count was that some of the machining oil at the plant contains chlorine. However, Maytag does not believe that this waste stream should be subject to regulation according to their interpretation of Section 261.6(a). It seems however, that Section 266 Subpart E is more applicable to Maytag's situation and this waste would be subject to the analysis and record-keeping requirements under Section 266.43(b)(1) and (6).

8.3 Status of Unit

The two chamber underground tank is located under Building No.137 along the east edge. During the September 1987 SV, a multiple borehole soil gas survey was conducted parallel to the eastern wall of this building (Figure 8.3). Nine borings were placed approximately five feet apart and a discrete sample (ADJ13002) was collected from hole No. 5 which exhibited a PID reading of 0.3 ppm. Borings were placed with a hand auger to a minimum of 12 inches. Sample ADJ13002 was analyzed for volatile organics; all parameters were below detection limits except methylene chloride (32 ppb).

8.4 Documented/Suspected Contaminant Release/Migration Pathway

8.4.1 Air Release/Migration Pathway

Chlorinated solvents tend to be volatile; however, the manner in which this waste stream is stored presents little potential for an air release except during transfer operations where spillage has been documented.

8.4.2 Surface Water Release/Migration Pathway

The curbed concrete pad provided for unloading is sloped toward the tank opening and provides adequate protection from overtopping except in cases of a large spill.

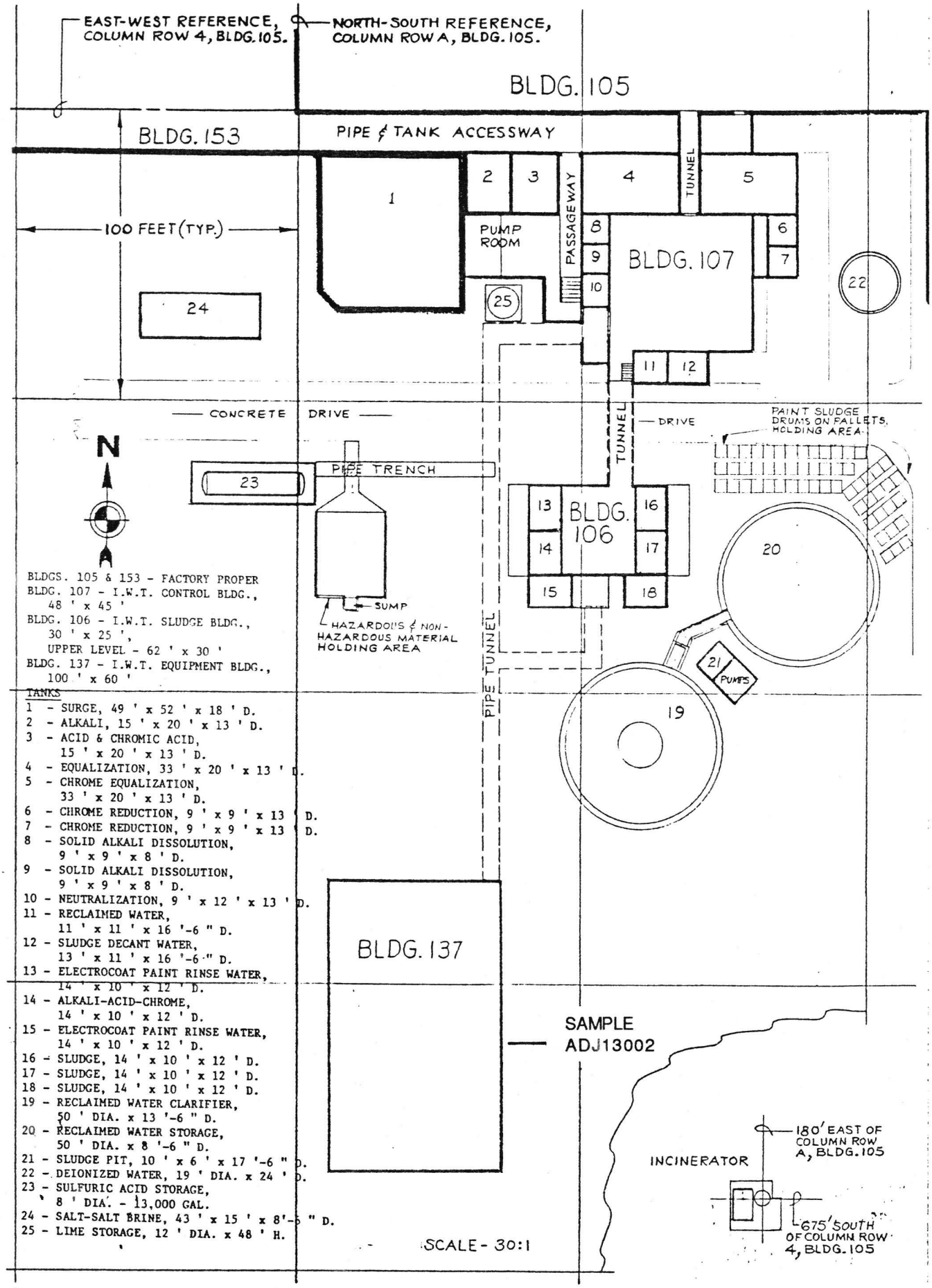


FIGURE 8.3
WASTE RECYCLING SWMU SAMPLING POINT

8.4.3 Groundwater Release/Migration Pathway

There is insufficient information available at this time to determine the potential for a groundwater release. No documentation was found to indicate that leak detection tests have ever been performed on this unit. However, based on the known shallow water table level, a release to groundwater should be of concern to this facility.

8.4.4 Soil Release/Migration Pathway

A release to soil could occur from this unit either as a secondary effect of a groundwater release, or as a surface release from the unloading area. Measures to further reduce this second possibility have already been considered.

8.4.5 Subsurface Gas Release/Migration Pathway

Due to the nature of the SWMU, conduits for the travel of a subsurface gas would be available; potential for a release however, would depend upon the ability of the chlorinated solvents used to volatilize to form a gas.

8.4.6 Exposure Potential

The two major avenues of concern at this time would be a groundwater release and a subsurface gas release. Too little information is currently available regarding either pathway to adequately assess the exposure potential. This unit should be included in the groundwater investigation currently in progress and an investigation of all available conduits that a subsurface gas could migrate through should be addressed.

9.0 INCINERATOR

9.1 Unit Characteristics

The incinerator was used during the period of 1961 to November 1981 to dispose of waste flush solvent which is a mixture of methyl ethyl ketone (MEK) and toluene (D001), and other miscellaneous D001 wastes and waste oils. The incinerator was a Prenco Model SF which was operated approximately 10 days per month. The incinerator consisted of a cylindrical combustion chamber two feet in diameter by 10 feet in length. The maximum operating temperature of the combustion chamber was 3,000^{0} F with a normal design temperature of 2,000^{0} F (Maytag, 4/25/85).

The incinerator and control building were located on a concrete slab east of Building No. 121 (Figure 4.0). Fuel oil and waste flush solvent were piped sixty feet by pipeline from another concrete slab which held two operating tanks, two holding tanks, and two fuel oil tanks. Wastes were pumped from the operating tanks to the incinerator

at a capacity of 20 gallons per hour. During operation, waste solvent was delivered to the incinerator storage tanks about twice a week. The operating tanks were filled by gravity from the storage tanks as needed. Waste solvent was then pumped from the operating tank to the incinerator (Maytag, 4/25/85; Hickok, 4/85; and Hickok, 5/19/88).

9.2 Waste Characteristics

The waste stream as shown contains spent non-halogenated solvents which are listed hazardous wastes (F003 and F005) and exhibit the characteristics of ignitability. According to Maytag, after incineration, the ash is not considered EP toxic based on testing conducted (Hickok, 4/85).

9.3 Status of Unit

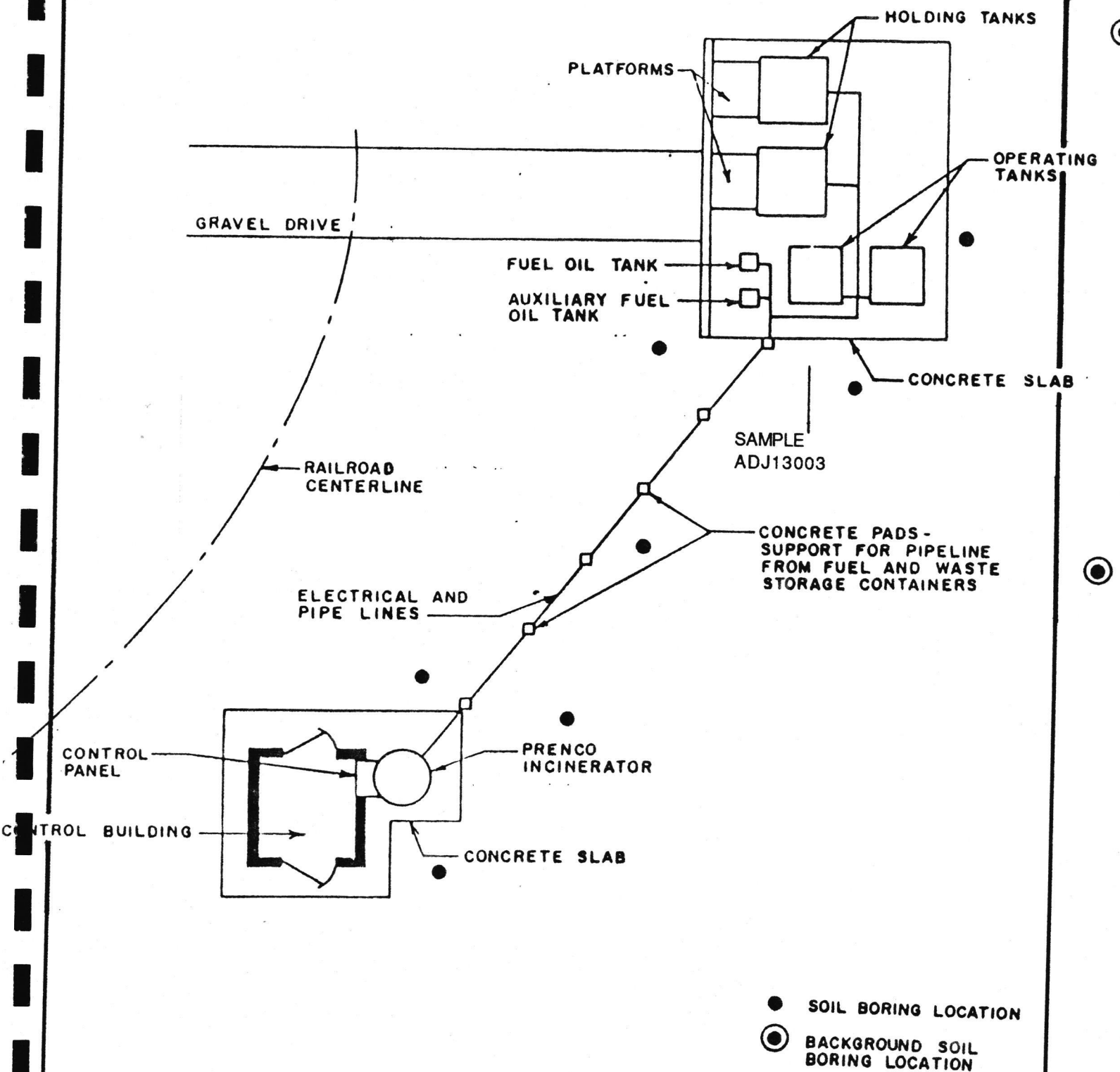
An inspection by IDWAWM, September 13, 1984, noted discoloration of the soil underneath the feedline to the incinerator. A sample was collected for metals analyses revealing levels of 0.182 ppm of cadmium and 0.040 ppm of lead. Analyses for volatile organics had not been performed (Leatherman, 9/19/84).

During preparation of the April 1985 Closure Plan, several surface soil samples were collected and analyzed for solvents to determine whether or not any release had occurred during operations of the incinerator. Results of these samples were not found, however, at the same time these samples were collected, an additional sample was collected at a depth of 30 inches below ground surface at a location south of the tank slab just to the east of the pipeline to the incinerator (Figure 9.1) (Maytag, 4/25/85).

This sample was analyzed by the University Hygienic Lab and showed the following:

1,1,1-trichloroethane	47	mg/kg (ppm)
benzene	0.6	
tetrachloroethane	21	
toluene	2300	
ethylbenzene	110	
o and p-xylene	430	
m-xylene	570	

A gas survey consisting of 25 boreholes was conducted during the September 1987 SV in the soil immediately surrounding the incinerator and holding tanks and in the soil underneath the pipeline connecting the two. A single grab sample (ADJ13003)was taken from soil in the borehole with the highest organic vapor reading (98.2 ppm) taken with a PID. Sample depth was a minimum of 12 inches or deeper as soil conditions permitted. As previously discussed, Maytag has identified one area of contamination from this unit while preparing the closure plan. The purpose of this survey was to determine whether this contamination was the result of an isolated release or if other



REFERENCE:
MAYTAG CLOSURE PLAN
SOIL BORING LOCATIONS
E.A. HICKOK AND ASSOCIATES
MINNEAPOLIS, MN.
MARCH 1985

INCINERATOR
MAYTAG PLANT NO. 2, NEWTON, IA.

PROJECT NO.	DATE	FIGURE NO.
3620-09		9.1

releases have occurred in conjunction with this unit. Analysis of this sample found toluene (140,000 ug/kg) and total xylenes (1,100,000 ug/kg).

During closure activities conducted in July 1988, a soil boring south of the incinerator tank pad (15 foot depth) detected a field reading of 240 ppm toluene (Figure 9.1). Ground water in this boring rose to within 10 to 12 feet of the surface and water collected in a bailer had a distinct organic layer. Laboratory analysis of this sample found: toluene, methyl ethyl ketone (MEK), 1,1,1-trichloroethane, ethylbenzene and xylenes. Available analyses included in Appendix D (Hickok, 8/1/88).

9.4 Documented/Suspected Contaminant Release/Migration Pathway

9.4.1 Air Release/Migration Pathway

During operation of the incinerator, there would have been the limited opportunity for an air release during transfer operations approximately twice per week. Additionally, during the period of operation no air pollution device was utilized in the event of incomplete combustion of the waste material (Hickok, 4/85). It is not possible now however, to assess whether or not a release occurred.

9.4.2 Surface Water Release/Migration Pathway

The area in which this SWMU is located is relatively flat and aside from the concrete pads the units are mounted on, any release would be in direct contact with native soils. The potential for a surface water release would have been minimal except in the event of a major spill that was inadequately contained and cleaned up. There is no evidence to suspect a spill of this type.

9.4.3 Groundwater Release/Migration Pathway

Based upon the information contained in Section 9.3, it is obvious that a release to groundwater has already occurred.

With the limited data concerning the hydrogeologic characteristics of the site, it is not currently possible to evaluate the pathway of any contaminants entering the groundwater after release.

9.4.4 Soil Release/Migration Pathway

As with a groundwater release, it is obvious that a release has already occurred. Migration from this area would not be expected to be significant due to its isolated location.

9.4.5 Subsurface Gas Release/Migration Pathway

While it is known that contaminants exist in this area, any conduits to provide a means of formation or travel are not known at this time.

9.4.6 Exposure Potential

The two migration pathways that are being impacted currently are groundwater and soil. This contamination is probably more the result of chronic releases throughout the period of operation rather than a one-time spill. As previously stated, inadequate information exists regarding the hydrogeologic conditions of the site making it impossible to evaluate the exposure pathway.

This unit is currently undergoing closure, however, closure plans will have to be modified to include cleanup of groundwater contamination and post-closure groundwater monitoring.

10.0 UNDERGROUND STORAGE TANKS

10.1 Unit Characteristics

The revised Closure Plan for RCRA facilities at Maytag Plant No. 2 identifies a 400 gallon underground storage tank adjacent to Building No. 126 (Figure 4.0). This tank, installed in 1967, is made of mild steel with an asphaltic coating. It is bedded in soil and strapped to a concrete pad in a graveled strip next to the Paint Mix Building (Hickok, 5/19/88).

Prior to 1982 this tank was used to collect waste flush solvent before it was transported to the above ground storage tanks associated with the incinerator. From 1982 until its use was discontinued in August 1984 it was used periodically to collect solvent flushed from hoses before unloading tanks of solvent (Maytag, 5/25/85 and Hickok, 5/19/88).

10.2 Waste Characteristics

The waste flush solvent collected prior to 1982 consisted of a mixture of MEK, toluene, and paint and exhibited the characteristic of a D001 waste (ignitability). Solvent flushed from hoses prior to unloading of new product also exhibits the characteristic of a D001 waste (Maytag, 4/25/85).

10.3 Status of Unit

Use of this tank ceased during 1984; however, at that time Maytag had no plans for removing the tank. In September 1987 during the SV a multiple borehole soil vapor survey was conducted in all accessible areas adjacent to the underground tank. Accessibility was limited due to concrete paving over most of the area. Boreholes were installed with a hand auger as a safety precaution and sample depths were

dependent on the soil conditions encountered. A single grab sample was collected from borehole No. 2 (Figure 4.0) which had the highest organic vapor reading (139.0 ppm at depth of 12 inches) obtained with a photoionization detector (PID). The purpose of this survey was to determine if a release from this tank had occurred without jeopardizing the integrity of the tank, since Maytag personnel were unable to pinpoint the exact location of this tank. Sample No. ADJ13004 was analyzed for volatile organics and showed no detectable levels of contaminants (Appendix B). It is not known what caused this discrepancy between the field reading (139.0 ppm) and the laboratory sample (N.D.) however, subsequent actions indicate the laboratory sample results should be disregarded (McKee, 9/16/87).

The revised closure plan dated May 1988 outlines steps for the removal of the 400 gallon tank. After removal of the tank a composite sample will be obtained from the excavated area. Following analysis, any contaminated soil in excess of background levels (to be established during closure activities) would be excavated and disposed of at an approved disposal facility. The area would be resampled and upon confirmation of a clean sample the area would be backfilled and this SWMU considered closed under clean closure. Since Maytag had no knowledge at this time of any leakage they did not anticipate the actual removal of any soil, only excavation and disposal of the 400 gallon tank. However, during initial soil borings conducted by E. A. Hickok and Associates at the site in July 1988 it was found that a sample from a boring located near the underground tank contained toluene at 220 ppm and MEK at 360 ppm. This boring was 21 feet deep and had water rising within it 10 feet below ground surface. Under these circumstances, clean closure will probably not be possible (Hickok, 5/19/88, and Evans, 7/6/88).

10.4 Documented/Suspected Contaminant Release

10.4.1 Air Release/Migration Pathway

Due to the manner in which the waste solvent and waste flush solvent mixture were stored it is unlikely that a release to air would have occurred except during transfer operations. Since use of this SWMU has not occurred since 1984, observation of transfer operations was not possible. However, any release at that time should have been minimal unless a spill occurred and there is no documentation to indicate that a spill ever occurred.

10.4.2 Surface Water Release/Migration Pathway

A limited potential for a release to surface waters existed during transfer of waste solvents. If any of these wastes had been spilled during transfer operations and not adequately contained and cleaned up they would have been subject to run-off during a rain event and potentially would have entered stormwater drains in the area. During the VSI and SV, inspection of this area did not indicate the presence of any staining in the vicinity of the tank.

All storm waters are discharged to an intermittent stream southeast of the facility.

10.4.3 Groundwater Release/Migration Pathway

Based upon the information contained in Section 10.3 it is obvious that a release to groundwater has already occurred.

With the limited data concerning the hydrogeologic characteristics of the site, it is not currently possible to evaluate the pathway of any contaminants entering the groundwater after release.

10.4.4 Soil Release/Migration Pathway

As with a groundwater release it is obvious that a release has already occurred. A soil release in this area would not be expected to be a significant migration pathway due to the extensive paving in this area. Soil contamination however, could cause the continued release of contaminants to groundwater during seasonal changes in the level of the water table.

10.4.5 Subsurface Gas Release/Migration Pathway

Any subsurface gases that might form in conjunction with this unit would have several potential migration pathways available. Any other underground piping in the area would provide an avenue of migration in addition to storm sewers running through the area. Any of these installations could serve as subsurface gas conduits.

10.4.6 Exposure Potential

The two migration pathways that are being impacted currently by this release are groundwater and soil. Potentially a subsurface gas release could also be occurring; however, this is not as likely due to the high water table exhibited thus far. However, due to the ignitable characteristic of the contaminants a release of this type would provide the greatest potential exposure, especially if migration led back into the plant.

This unit is currently undergoing closure as outlined in Section 10.3 however, closure plans will have to be modified to include clean-up of groundwater contamination and post-closure groundwater monitoring.

11.0 WASTE PILE

11.1 Unit Characteristics

For approximately six to nine months in 1981 Maytag used an area within a SPCC secondary containment structure (Figure 11.1) to store wastewater treatment sludge while a delisting of this waste was sought. This secondary containment unit consisted of a bermed area surrounding an

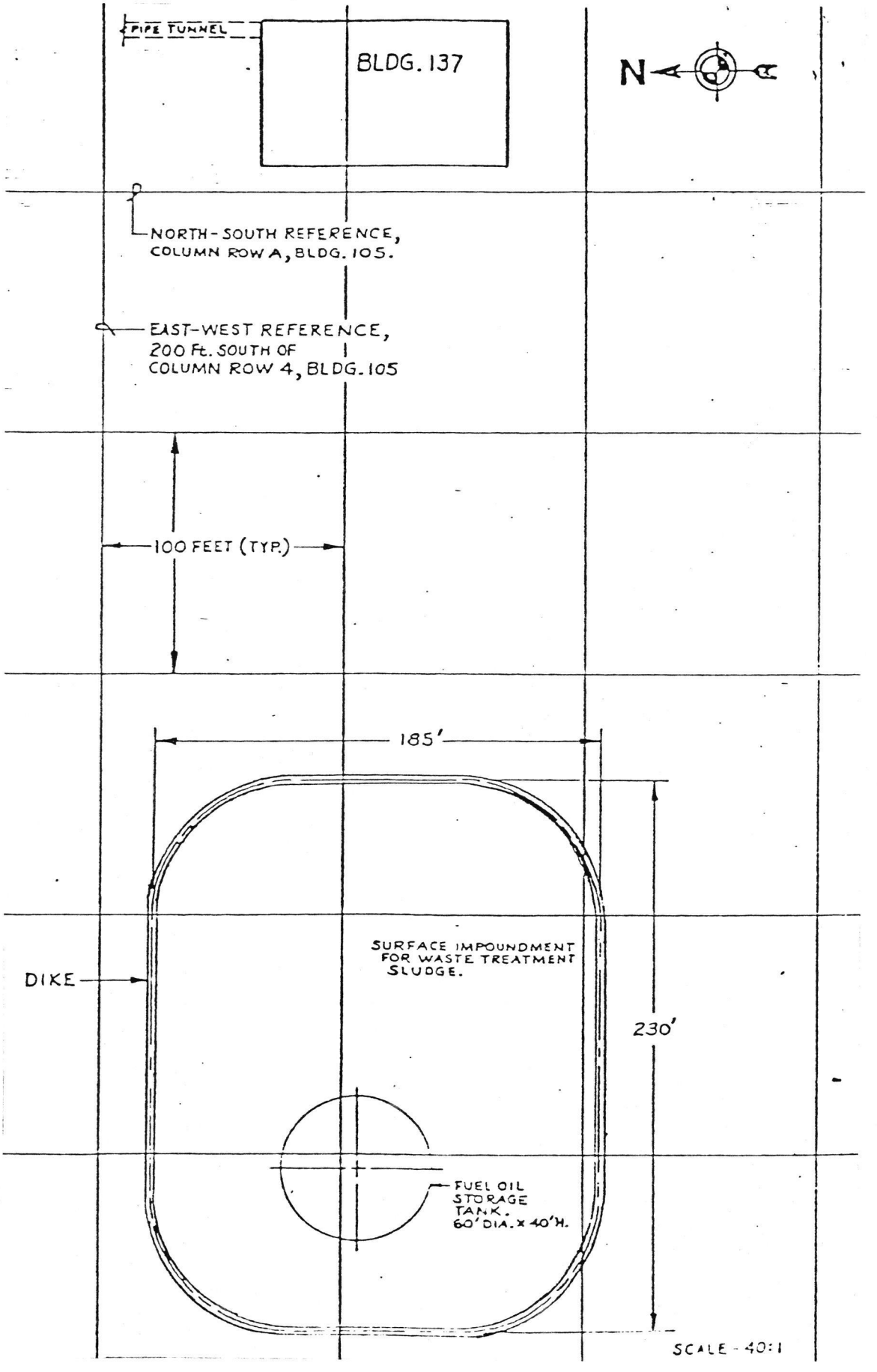


FIGURE 11.3
WASTE PILE AREA

above-ground tank that contains No. 6 fuel oil. The bottom and sides of the bermed area are lined with compacted clay in accordance with spill prevention, containment and countermeasure (SPCC) guidelines and was in place prior to placement of the temporary waste pile at this location. After receiving a temporary exclusion for these wastes in August 1981 the material in the waste pile (approximately 815 tons) was disposed of off site (Maytag, 4/25/85, 10/8/86 and Hickok, 5/19/88).

11.2 Waste Characteristics

The wastewater treatment sludge stored in the waste pile was originally identified as an F006 sludge due to the treatment of electroplating wastes.

For an unknown period of time porcelain enameling coating waste was also stored in this area prior to disposal. It has been reported that during September and October of 1982 and 1984, 206 tons of this waste was removed and disposed of at the Black Hawk County Landfill. This material is now being collected in a 20 cubic yard covered box prior to disposal. This solid waste contains small amounts of 40 CFR Part 261 Appendix VIII constituents (Maytag, 4/25/85).

11.3 Status of Unit

Originally this waste pile was improperly identified as a surface impoundment on Maytag's Hazardous Waste Permit Application dated November 17, 1980. Notice of a temporary exclusion for the F006 sludge was published in the Federal Register on August 6, 1981. After publication of the exclusion, the waste sludge that had accumulated in this area was disposed of off site and Maytag began vacuum filtering this sludge as discussed in Section 2.4. Maytag's Hazardous Waste Permit was revised January 24, 1983 to correct the misidentification and reflect the granting of the temporary exclusion (Maytag, 4/25/85).

Originally this SWMU was not considered for any further closure activities within the 1985 Closure Plan. During the September 1987 SV a 4,900 square foot grid was sampled. Forty-nine aliquots were collected and analyzed for metals. In addition, a discrete sample (ADJ13005) was collected from borehole 2-3 (PID reading 2.7 ppm) for volatile organics analysis. All parameters for volatile organics were listed as non-detectable. Metals values are listed below.

Parameter	Reported Quantity (mg/kg)	EP Toxicity mg/l
Aluminum	14,000	
Arsenic	22	5
Barium	260	100
Cadmium	4.5	1.0
Cobalt	3.7	
Chromium	480	5.0
Iron	21,000	
Manganese	870	

Nickel	270
Zinc	1,300
Calcium	45,000
Magnesium	9,700

In order to attain clean closure of this unit Maytag has included this SWMU in the current Closure Plan for RCRA facilities at Plant No. 2. The bottom and sides of the storage area will be sampled using a 50 ft. by 50 ft. grid system. Soils will be considered contaminated if found in excess of background levels or health based standards. These soils would then be excavated and disposed of at an approved facility. Verification sampling would take place and backfilling of the area would be accomplished. The excavated area would be backfilled with compacted clay to meet or exceed permeabilities prior to removal operations and in accordance with the SPCC plan for the No. 6 fuel oil tank (Hickok, 5/19/88).

The Groundwater Monitoring Plan for RCRA facilities at Plant No. 2 indicated that groundwater was also encountered at shallow levels under this SWMU. Analysis of a groundwater sample from this area showed levels of barium, cadmium and chromium above U.S. EPA interim primary drinking water standards (Appendix D)(Hickok, 8/1/88).

11.4 Documented/Suspected Contaminant Release/Migration Pathway

11.4.1 Air Release/Migration Pathway

Electrocoating sludge was not vacuum filtered at the time this SWMU was used and an air release would depend on weather conditions at the time of storage and if the material dried sufficiently to become windborne.

Too little information exists to make a similar determination concerning the porcelain wastes.

11.4.2 Surface Water Release/Migration Pathway

Due to the nature of the structure (SPCC containment structure) being used for the temporary storage of electrocoating and porcelain wastes it is unlikely that conditions could have been present for a release to occur.

11.4.3 Groundwater Release/Migration Pathway

Based upon the information contained in Section 11.3 it appears that a release to groundwater has already occurred in spite of the compacted clay lining present.

With the limited data concerning the hydrogeologic characteristics of the site, it is not currently possible to evaluate the pathway of any contaminants entering the groundwater after release.

11.4.4 Soil Release/Migration Pathway

Due to the nature of this SWMU, it is assumed any release to soil would be dependent on a groundwater release and would be subject to much the same migration pathways, although adsorption to soil particles would have to be considered separately for each contaminant of concern.

11.4.5 Subsurface Gas Release/Migration Pathway

Due to the nature of the SWMU and the characteristics of the waste involved, it is unlikely that a subsurface gas release would occur.

11.4.6 Exposure Potential

At this time it would appear the primary release of concern is a release to groundwater, which has already occurred. Since no wastes of any sort have been stored here since 1984 a continuing release to any media is not of concern; however, determination of the existing groundwater release must be addressed. Maytag and E.A. Hickok and Associates will need to expand the Closure plan as outlined for this unit to include groundwater monitoring, closure and post-closure care.

12.0 CONCLUSIONS AND RECOMMENDATIONS

The Maytag Plant No. 2 currently has eight SWMUs of which four are active: a curbed container storage area, two aboveground storage tanks, sludge vacuum filter, and used oil underground storage tank. The remaining four are undergoing closure: the incinerator, one underground storage tank, a former waste pile and three interim container storage areas. During initial closure activities, groundwater contamination had been observed in relation to three of these units.

Recommendation for an RFI has already been made by U.S. EPA Region VII. Depending on the extent of current Closure activities (Maytag has recently retained a second consultant), the RFI could be conducted in conjunction with this project. Regardless of when the RFI is conducted, the information gained should be able to identify all potential exposure receptors that have been impacted. Following this, a study should be conducted to identify the remedial measures necessary to prevent further releases and/or exposures.

The RFI should begin with a statement of work outlining the general objectives of the investigation. The SWMUs to be included in the RFI are the four SWMUs undergoing closure, plus the underground tank portion of the waste oil recycling operation and the curbed container storage area. A phased approach designed to allow flexibility based upon the findings of each previous phase would best suit the diversity of units involved here.

The first phase of the RFI should include a site-specific investigation of the hydrogeology of the site, identifying the uppermost aquifer, its usage, and potential usage. Once the uppermost aquifer has been identified, the

direction and rate of groundwater flow needs to be established. With this information it will then be possible to conduct an investigation focused on determining the vertical and horizontal extent of contamination from each SWMU.

Concurrent with the above work, an investigation of the vertical and horizontal extent of soil contamination needs to be completed along with a study of the possible pathways available to a subsurface gas.

The final determination of the RFI will be the effect of any identified release to any of the media involved. This determination will be the deciding factor as to whether or not a Corrective Measures Study (CMS) needs to be initiated.

APPENDIX A

Administrative Record

APPENDIX A

Administrative Record

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APPENDIX B

SV Sample Data

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ13

COMPOUND	UNITS	001		002		003		004		005		007	
SJ01 SILVER	MG/KG	9.40	U							5.90	U	1.80	M
SJ02 ALUMINUM	MG/KG	13000.00								14000.00		7100.00	
SJ03 ARSENIC	MG/KG	14.00	J							22.00	J	8.10	M
SJ04 BARIUM	MG/KG	860.00								260.00		120.00	
SJ05 BERYLLIUM	MG/KG	4.70	U							3.00	U	3.30	U
SJ06 CADMIUM	MG/KG	6.40	U							4.50	M	3.30	U
SJ07 COBALT	MG/KG	150.00								37.00		12.00	M
SJ08 CHROMIUM	MG/KG	200.00								480.00		15.00	
SJ09 COPPER	MG/KG	340.00								37.00	U	17.00	U
SJ10 IRON	MG/KG	40000.00								21000.00		11000.00	
SJ11 MANGANESE	MG/KG	640.00								870.00		570.00	
SJ12 NICKEL	MG/KG	700.00								270.00		79.00	U
SJ13 LEAD	MG/KG	450.00								25.00	U	22.00	U
SJ14 ANTIMONY	MG/KG	I	I							I	I	I	I
SJ15 SELENIUM	MG/KG	4.70	U							30.00	U	3.30	U
SJ16 THALLIUM	MG/KG	9.40	U							5.90	U	6.60	U
SJ17 VANADIUM	MG/KG	60.00								38.00	M	18.00	M
SJ18 ZINC	MG/KG	1600.00								1300.00		140.00	
SJ19 CALCIUM	MG/KG	68000.00								45000.00		70000.00	
SJ20 MAGNESIUM	MG/KG	21000.00								9700.00		18000.00	
SJ21 SODIUM	MG/KG	2500.00	M							790.00	M	690.00	M
SJ22 POTASSIUM	MG/KG	2200.00	M							1800.00	M	750.00	M
SJ23 TIN	MG/KG	N/A								N/A		N/A	
SJ24 MERCURY	MG/KG	0.19	U							0.29	J	0.13	U
S001 CHLOROMETHANE	UG/KG	44	U	12	U	84000	U	11	U	12	U	14	U
S002 BROMOMETHANE	UG/KG	44	U	12	U	84000	U	11	U	12	U	14	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ13

COMPOUND	UNITS	001		002		003		004		005		007	
S003 VINYL CHLORIDE	UG/KG	44	U	12	U	84000	U	11	U	12	U	14	U
S004 CHLOROETHANE	UG/KG	44	U	12	U	84000	U	11	U	12	U	14	U
S005 METHYLENE CHLORIDE	UG/KG	22	U	36		5600	M	5.5	U	6.0	U	7.0	U
S006 1,1-DICHLOROETHYLENE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S007 1,1-DICHLOROETHANE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S008 TRANS-1,2-DICHLOROETHYLENE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S009 CHLOROFORM	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S010 1,2-DICHLOROETHANE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S011 1,1,1-TRICHLOROETHANE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S012 CARBON TETRACHLORIDE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S013 BROMODICHLOROMETHANE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S014 1,2-DICHLOROPROPANE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S015 BENZENE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S016 TRANS-1,3-DICHLOROPROPENE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S017 TRICHLOROETHYLENE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S018 CIS-1,3-DICHLOROPROPENE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S019 DIBROMOCHLOROMETHANE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S020 1,1,2-TRICHLOROETHANE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S021 2-CHLOROETHYLVINYL ETHER	UG/KG	44	U	12	U	84000	U	11	U	12	U	14	U
S022 BROMOFORM	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S023 1,1,2,2-TETRACHLOROETHENE	UG/KG	5.0	M	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S024 TOLUENE	UG/KG	19		3.0	M	140000		10		6.0	U	0.80	M
S025 1,1,2,2-TETRACHLOROETHANE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S026 CHLOROBENZENE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S027 ETHYL BENZENE	UG/KG	18		6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S028 ACETONE	UG/KG	350	U	57	U	55000	U	35	U	30	U	53	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ13

COMPOUND	UNITS	001		002		003		004		005		007	
S029 CARBON DISULFIDE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S030 2-BUTANONE	UG/KG	I	I	I	I	I	I	I	I	I	I	I	I
S031 VINYL ACETATE	UG/KG	44	U	12	U	84000	U	11	U	12	U	14	U
S032 2-HEXANONE	UG/KG	44	U	12	U	84000	U	11	U	12	U	14	U
S033 4-METHYL-2-PENTANONE	UG/KG	30		12	U	84000	U	11	U	12	U	14	U
S034 STYRENE	UG/KG	22	U	6.0	U	42000	U	5.5	U	6.0	U	7.0	U
S035 XYLENES, TOTAL	UG/KG	190		1.0	M	1100000		5.5	U	6.0	U	7.0	U
S090 SURROGATE D8-TOLUENE	%	**		**		**		**		**		**	
S091 SURROGATE 4-BROMOFLUOROBENZENE	%	**		**		**		**		**		**	
S092 SURROGATE D4-1,2-DICHLOROETHANE	%	**		**		**		**		**		**	
ZZ01 SAMPLE NUMBER	NA	001		002		003		004		005		007	
ZZ02 ACTIVITY CODE	NA	ADJ13		ADJ13		ADJ13		ADJ13		ADJ13		ADJ13	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ13

COMPOUND	UNITS	007D	008F	010	010D
SJ01 SILVER	MG/KG	1.90 M			
SJ02 ALUMINUM	MG/KG	4600.00			
SJ03 ARSENIC	MG/KG	7.50 M			
SJ04 BARIUM	MG/KG	210.00			
SJ05 BERYLLIUM	MG/KG	3.40 U			
SJ06 CADMIUM	MG/KG	3.40 U			
SJ07 COBALT	MG/KG	7.20 M			
SJ08 CHROMIUM	MG/KG	15.00			
SJ09 COPPER	MG/KG	26.00 U			
SJ10 IRON	MG/KG	9200.00			
SJ11 MANGANESE	MG/KG	400.00			
SJ12 NICKEL	MG/KG	39.00 U			
SJ13 LEAD	MG/KG	60.00			
SJ14 ANTIMONY	MG/KG	I I			
SJ15 SELENIUM	MG/KG	3.40 U			
SJ16 THALLIUM	MG/KG	6.80 U			
SJ17 VANADIUM	MG/KG	15.00 M			
SJ18 ZINC	MG/KG	99.00			
SJ19 CALCIUM	MG/KG	81000.00			
SJ20 MAGNESIUM	MG/KG	23100.00			
SJ21 SODIUM	MG/KG	650.00 M			
SJ22 POTASSIUM	MG/KG	590.00 M			
SJ23 TIN	MG/KG	N/A			
SJ24 MERCURY	MG/KG	0.14 U			
S001 CHLOROMETHANE	UG/KG	12 U			
S002 BROMOMETHANE	UG/KG	12 U			

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ13

COMPOUND	UNITS	007D	008F	010	010D
S003 VINYL CHLORIDE	UG/KG:12	U			
S004 CHLOROETHANE	UG/KG:12	U			
S005 METHYLENE CHLORIDE	UG/KG:6.0	U			
S006 1,1-DICHLOROETHYLENE	UG/KG:6.0	U			
S007 1,1-DICHLOROETHANE	UG/KG:6.0	U			
S008 TRANS-1,2-DICHLOROETHYLENE	UG/KG:6.0	U			
S009 CHLOROFORM	UG/KG:6.0	U			
S010 1,2-DICHLOROETHANE	UG/KG:6.0	U			
S011 1,1,1-TRICHLOROETHANE	UG/KG:6.0	U			
S012 CARBON TETRACHLORIDE	UG/KG:6.0	U			
S013 BROMODICHLOROMETHANE	UG/KG:6.0	U			
S014 1,2-DICHLOROPROPANE	UG/KG:6.0	U			
S015 BENZENE	UG/KG:6.0	U			
S016 TRANS-1,3-DICHLOROPROPENE	UG/KG:6.0	U			
S017 TRICHLOROETHYLENE	UG/KG:0.90	M			
S018 CIS-1,3-DICHLOROPROPENE	UG/KG:6.0	U			
S019 DIBROMOCHLOROMETHANE	UG/KG:6.0	U			
S020 1,1,2-TRICHLOROETHANE	UG/KG:6.0	U			
S021 2-CHLOROETHYLVINYL ETHER	UG/KG:12	U			
S022 BROMOFORM	UG/KG:6.0	U			
S023 1,1,2,2-TETRACHLOROETHENE	UG/KG:6.0	U			
S024 TOLUENE	UG/KG:2.0	M			
S025 1,1,2,2-TETRACHLOROETHANE	UG/KG:6.0	U			
S026 CHLOROBENZENE	UG/KG:6.0	U			
S027 ETHYL BENZENE	UG/KG:6.0	U			
S028 ACETONE	UG/KG:41	U			

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ13

COMPOUND	UNITS	007D		008F		010		010D	
S029 CARBON DISULFIDE	UG/KG	6.0	U						
S030 2-BUTANONE	UG/KG	I	I						
S031 VINYL ACETATE	UG/KG	12	U						
S032 2-HEXANONE	UG/KG	12	U						
S033 4-METHYL-2-PENTANONE	UG/KG	12	U						
S034 STYRENE	UG/KG	6.0	U						
S035 XYLENES, TOTAL	UG/KG	6.0	U						
S090 SURROGATE D8-TOLUENE	%	**							
S091 SURROGATE 4-BROMOFLUOROBENZENE	%	**							
S092 SURROGATE D4-1,2-DICHLOROETHANE	%	**							
WJ01 SILVER, TOTAL	UG/L			10	U	10.0	U	10.0	U
WJ02 ALUMINUM, TOTAL	UG/L			110	M	1000.0		920.0	
WJ03 ARSENIC, TOTAL	UG/L			10	U	10.0	U	10.0	U
WJ04 BARIUM, TOTAL	UG/L			100	U	160.0	M	160.0	M
WJ05 BERYLLIUM, TOTAL	UG/L			5	U	5.0	U	5.0	U
WJ06 CADMIUM, TOTAL	UG/L			5	U	5.0	U	5.0	U
WJ07 COBALT, TOTAL	UG/L			25	U	17.0	M	18.0	M
WJ08 CHROMUIM, TOTAL	UG/L			5	U	16.0		9.5	M
WJ09 COPPER, TOTAL	UG/L			19		60.0	U	43.0	U
WJ10 IRON, TOTAL	UG/L			50	U	1300.0		1300.0	
WJ11 MANGANESE, TOTAL	UG/L			7.5	U	100.0		110.0	
WJ12 NICKEL, TOTAL	UG/L			19	M	70.0	U	63.0	U
WJ13 LEAD, TOTAL	UG/L			5.1		18.0	U	16.0	
WJ14 ANTIMONY, TOTAL	UG/L			60	U	60.0	U	60.0	U
WJ15 SELENIUM, TOTAL	UG/L			5	U	5.0	U	5.0	U
WJ16 THALLIUM, TOTAL	UG/L			10	U	10.0	U	10.0	U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ13

COMPOUND	UNITS	007D	008F	010		010D			
WJ17 VANADIUM, TOTAL	UG/L		50	U 28.0	M	26.0	M		
WJ18 ZINC, TOTAL	UG/L		14	M 290.0	J	310.0	J		
WJ19 CALCIUM, TOTAL	UG/L		2500	U 43000.0		45000.0			
WJ20 MAGNESIUM, TOTAL	UG/L		2500	U 6600.0		6800.0			
WJ21 SODIUM, TOTAL	UG/L		5000	U 84000.0		91000.0			
WJ22 POTASSIUM, TOTAL	UG/L		5000	U 2100.0	M	2100.0	M		
WJ23 TIN, TOTAL	UG/L		N/A	N/A		N/A			
WJ24 MERCURY, TOTAL	UG/L		.2	U .40		.20			
WK01 PHENOL	UG/L			12	U	10	U		
WK03 BIS(2-CHLOROETHYL) ETHER	UG/L			12	U	10	U		
WK04 2-CHLOROPHENOL	UG/L			12	U	10	U		
WK05 1,3-DICHLOROBENZENE	UG/L			12	U	10	U		
WK06 1,4-DICHLOROBENZENE	UG/L			12	U	10	U		
WK07 BENZYL ALCOHOL	UG/L			12	U	10	U		
WK08 1,2-DICHLOROBENZENE	UG/L			12	U	10	U		
WK09 2-METHYLPHENOL (O-CRESOL)	UG/L			12	U	10	U		
WK10 BIS(2-CHLOROISOPROPYL) ETHER	UG/L			12	U	10	U		
WK11 4-METHYLPHENOL (M-CRESOL)	UG/L			12	U	10	U		
WK12 N-NITROSO-DIPROPYLAMINE	UG/L			12	U	10	U		
WK13 HEXACHLOROETHANE	UG/L			12	U	10	U		
WK14 NITROBENZENE	UG/L			12	U	10	U		
WK15 ISOPHORONE	UG/L			12	U	10	U		
WK16 2-NITROPHENOL	UG/L			12	U	10	U		
WK17 2,4-DIMETHYLPHENOL	UG/L			12	U	10	U		
WK18 BENZOIC ACID	UG/L			62	U	50	U		
WK19 BIS(2-CHLOROETHYOXY) METHANE	UG/L			12	U	10	U		

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ13

COMPOUND	UNITS	0070	008F	010		0100			
WK46 N-NITROSODIPHENYLAMINE	UG/L			12	U	10	U		
WK47 4-BROMOPHENYL PHENYL ETHER	UG/L			12	U	10	U		
WK48 HEXACHLOROBENZENE	UG/L			12	U	10	U		
WK49 PENTACHLOROPHENOL	UG/L			62	U	50	U		
WK50 PHENANTHRENE	UG/L			12	U	10	U		
WK51 ANTHRACENE	UG/L			12	U	10	U		
WK52 DI-N-BUTYL PHTHALATE	UG/L			12	U	10	U		
WK53 FLUORANTHENE	UG/L			12	U	10	U		
WK54 PYRENE	UG/L			12	U	10	U		
WK55 BUTYL BENZYL PHTHALATE	UG/L			12	U	10	U		
WK56 3,3'-DICHLOROBENZIDINE	UG/L			25	U	20	U		
WK57 BENZO(A)ANTHRACENE	UG/L			12	U	10	U		
WK58 BIS(2-ETHYLHEXYL)PHTHALATE	UG/L			22	J	10	U		
WK59 CHRYSENE	UG/L			12	U	10	U		
WK60 DI-N-OCTYL PHTHALATE	UG/L			12	U	10	U		
WK61 BENZO(B)FLUORANTHENE	UG/L			12	U	10	U		
WK62 BENZO(K)FLUORANTHENE	UG/L			12	U	10	U		
WK63 BENZO(A)PYRENE	UG/L			12	U	10	U		
WK64 INDENO(1,2,3-CD)PYRENE	UG/L			12	U	10	U		
WK65 DIBENZO(A,H)ANTHRACENE	UG/L			12	U	10	U		
WK66 BENZO(G,H,I)PERYLENE	UG/L			12	U	10	U		
WK90 SURROGATE D5 NITROBENZENE	%			**		**			
WK91 SURROGATE 2-FLUOROBIPHENYL	%			**		**			
WK92 SURROGATE D14-P-TERPHENYL	%			**		**			
WK93 SURROGATE D5 PHENOL	%			**		**			
WK94 SURROGATE 2-FLUOROPHENOL	%			**		**			

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ13

COMPOUND	UNITS	007D		008F		010		0100			
WK20 2,4-DICHLOROPHENOL	UG/L					12	U	10	U		
WK21 1,2,4-TRICHLOROBENZENE	UG/L					12	U	10	U		
WK22 NAPHTHALENE	UG/L					12	U	10	U		
WK23 4-CHLOROANILINE	UG/L					12	U	10	U		
WK24 HEXACHLOROBUTADIENE	UG/L					12	U	10	U		
WK25 4-CHLORO-3-METHYLPHENOL	UG/L					12	U	10	U		
WK26 2-METHYLNAPHTHALENE	UG/L					12	U	10	U		
WK27 HEXACHLOROCYCLOPENTADIENE	UG/L					12	U	10	U		
WK28 2,4,6-TRICHLOROPHENOL	UG/L					12	U	10	U		
WK29 2,4,5-TRICHLOROPHENOL	UG/L					12	U	10	U		
WK30 2-CHLORONAPHTHALENE	UG/L					62	U	50	U		
WK31 2-NITROANILINE (ORTHO NITROANILINE)	UG/L					12	U	10	U		
WK32 DIMETHYLPHTHALATE	UG/L					62	U	50	U		
WK33 ACENAPHTHYLENE	UG/L					12	U	10	U		
WK34 3-NITROANILINE	UG/L					12	U	10	U		
WK35 ACENAPHTHENE	UG/L					62	U	50	U		
WK36 2,4-DINITROPHENOL	UG/L					12	U	10	U		
WK37 4-NITROPHENOL	UG/L					62	U	50	U		
WK38 DIBENZOFURAN	UG/L					62	U	50	U		
WK39 2,4-DINITROTOLUENE	UG/L					12	U	10	U		
WK40 2,6-DINITROTOULENE	UG/L					12	U	10	U		
WK41 DIETHYLPHTHALATE	UG/L					12	U	10	U		
WK42 4-CHLOROPHENYL PHENYL ETHER	UG/L					12	U	10	U		
WK43 FLOURENE	UG/L					12	U	10	U		
WK44 4-NITROANILINE	UG/L					12	U	10	U		
WK45 4,6-DINITRO-2-METHYLPHENOL	UG/L					62	U	50	U		

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ13

COMPOUND	UNITS	0070	008F	010	010D		
WK95 SURROGATE 2,4,6-TRIBROMOPHENOL	%			**	**		
W001 CHLOROMETHANE	UG/L		10	U 10	U 10	U	
W002 BROMOMETHANE	UG/L		10	U 10	U 10	U	
W003 VINYL CHLORIDE	UG/L		10	U 10	U 10	U	
W004 CHLOROETHANE	UG/L		10	U 10	U 10	U	
W005 METHYLENE CHLORIDE	UG/L		5	U 5.0	U 5.0	U	
W006 1,1-DICHLOROETHYLENE	UG/L		5	U 5.0	U 5.0	U	
W007 1,1-DICHLOROETHANE	UG/L		5	U 5.0	U 5.0	U	
W008 1,2-DICHLOROETHENE (TOTAL)	UG/L		5	U 5.0	U 5.0	U	
W009 CHLOROFORM	UG/L		5	U 5.0	U 5.0	U	
W010 1,2-DICHLOROETHANE	UG/L		5	U 5.0	U 5.0	U	
W011 1,1,1-TRICHLOROETHANE	UG/L		5	U 5.0	U 5.0	U	
W012 CARBON TETRACHLORIDE	UG/L		5	U 5.0	U 5.0	U	
W013 BROMODICHLOROMETHANE	UG/L		5	U 5.0	U 5.0	U	
W014 1,2-DICHLOROPROPANE	UG/L		5	U 5.0	U 5.0	U	
W015 BENZENE	UG/L		5	U 5.0	U 5.0	U	
W016 1,3-DICHLOROPROPENE TOTAL	UG/L		5	U 5.0	U 5.0	U	
W017 TRICHLOROETHYLENE	UG/L		5	U 5.0	U 5.0	U	
W018 CIS-1,3-DICHLOROPROPENE	UG/L		5	U 5.0	U 5.0	U	
W019 DIBROMOCHLOROMETHANE	UG/L		5	U 5.0	U 5.0	U	
W020 1,1,2-TRICHLOROETHANE	UG/L		5	U 5.0	U 5.0	U	
W021 2-CHLOROETHYLVINYL ETHER	UG/L		10	U 10	U 10	U	
W022 BROMOFORM	UG/L		5	U 5.0	U 5.0	U	
W023 1,1,2,2-TETRACHLOROETHENE	UG/L		5	U 5.0	U 5.0	U	
W024 TOLUENE	UG/L		0.5	M 5.0	U 5.0	U	
W025 1,1,2,2-TETRACHLOROETHANE	UG/L		5	U 5.0	U 5.0	U	

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ15

COMPOUND	UNITS	007D	008F	010	010D
WK95 SURROGATE 2,4,6-TRIBROMOPHENOL	%			* *	* *
W001 CHLOROMETHANE	UG/L		10	U 10	U 10 U
W002 BROMOMETHANE	UG/L		10	U 10	U 10 U
W003 VINYL CHLORIDE	UG/L		10	U 10	U 10 U
W004 CHLOROETHANE	UG/L		10	U 10	U 10 U
W005 METHYLENE CHLORIDE	UG/L		5	U 5.0	U 5.0 U
W006 1,1-DICHLOROETHYLENE	UG/L		5	U 5.0	U 5.0 U
W007 1,1-DICHLOROETHANE	UG/L		5	U 5.0	U 5.0 U
W008 1,2-DICHLOROETHENE (TOTAL)	UG/L		5	U 5.0	U 5.0 U
W009 CHLOROFORM	UG/L		5	U 5.0	U 5.0 U
W010 1,2-DICHLOROETHANE	UG/L		5	U 5.0	U 5.0 U
W011 1,1,1-TRICHLOROETHANE	UG/L		5	U 5.0	U 5.0 U
W012 CARBON TETRACHLORIDE	UG/L		5	U 5.0	U 5.0 U
W013 BROMODICHLOROMETHANE	UG/L		5	U 5.0	U 5.0 U
W014 1,2-DICHLOROPROPANE	UG/L		5	U 5.0	U 5.0 U
W015 BENZENE	UG/L		5	U 5.0	U 5.0 U
W016 1,3-DICHLOROPROPENE TOTAL	UG/L		5	U 5.0	U 5.0 U
W017 TRICHLOROETHYLENE	UG/L		5	U 5.0	U 5.0 U
W018 CIS-1,3-DICHLOROPROPENE	UG/L		5	U 5.0	U 5.0 U
W019 DIBROMOCHLOROMETHANE	UG/L		5	U 5.0	U 5.0 U
W020 1,1,2-TRICHLOROETHANE	UG/L		5	U 5.0	U 5.0 U
W021 2-CHLOROETHYLVINYL ETHER	UG/L		10	U 10	U 10 U
W022 BROMOFORM	UG/L		5	U 5.0	U 5.0 U
W023 1,1,2,2-TETRACHLOROETHENE	UG/L		5	U 5.0	U 5.0 U
W024 TOLUENE	UG/L		0.5	M 5.0	U 5.0 U
W025 1,1,2,2-TETRACHLOROETHANE	UG/L		5	U 5.0	U 5.0 U

ANALYSIS REQUEST DETAIL REPORT ACTIVITY: 7-ADJ13

COMPOUND	UNITS	007D	008F		010		010D			
W026 CHLOROBENZENE	UG/L		5	U	5.0	U	5.0	U		
W027 ETHYL BENZENE	UG/L		5	U	5.0	U	5.0	U		
W028 ACETONE	UG/L		28	J	10	U	10	U		
W029 CARBON DISULFIDE	UG/L		5	U	5.0	U	5.0	U		
W030 2-BUTANONE	UG/L		I	I	I	I	I	I		
W031 VINYL ACETATE	UG/L		10	U	10	U	10	U		
W032 2-HEXANONE	UG/L		10	U	10	U	10	U		
W033 4-METHYL-2-PENTANONE	UG/L		3	M	10	U	10	U		
W034 STYRENE	UG/L		5	U	5.0	U	5.0	U		
W035 XYLENES, TOTAL	UG/L		5	U	5.0	U	5.0	U		
W090 SURROGATE D8-TOLUENE	%		**		**		**			
W091 SURROGATE 4-BROMOFLUOROBENZENE	%		**		**		**			
W092 SURROGATE D4-1,2-DICHLORDETHANE	%		**		**		**			
ZZ01 SAMPLE NUMBER	NA	007	008		010		010			
ZZ02 ACTIVITY CODE	NA	ADJ13	ADJ13		ADJ13		ADJ13			

APPENDIX C

Chain-of-Custody
and
Sample Field Sheets

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
P.L. MAYES	MAYTAG - PLANT #2	16 / 7 / 87	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE (2 oz)	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
ADJ13001	1				1		✓	✓			
ADJ13002					1		✓				
ADJ13003					1		✓				
ADJ13004					1		✓				
ADJ13005	1				1			✓			
ADJ13007	1				1			✓			
ADJ13007D	1				1	✓					
ADJ13010	1	1			1	✓					
ADJ13010D	1	1			1	✓					
ADJ1008	1										

DESCRIPTION OF SHIPMENT

1 PIECE(S) CONSISTING OF _____ BOX(ES)

1 ICE CHEST(S); OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER: _____

_____ COURIER

_____ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER) _____

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Michael D. Clemons ☐ SEALED ☒ UNSEALED	7/17/87	1305	Sandra Rust ☐ SEALED ☐ UNSEALED	Analysis
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA-9262(Revised 5/85)

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 87 ACTNO: ADJ13 SAMNO: 010 QCC: D MEDIA: WATER PL: DONA/JACOBS

ACTIVITY DES: MAYTAG COMPANY
LOCATION: NEWTON IA PROJECT NUM: A60 REF LATITUDE: __ __ __
PT: LONGITUDE: ___ __ __

SAMPLE DES: SAMPLE DOWNSTREAM OF OUTFALL 001
LOCATION: NEWTON IA DATE TIME FROM REF PT
SMO NO: _____ SHIP NO: 00 LAB: ___ BEG: 09/17/87 __:__ EAST: ____
STORET/SAROAD NO: _____ END: __/__/__ 15:20 NORTH: ____
DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	COLOR	PRESERVATIVE	MGP	NAME
CUBI	WHITE	HNO3		METALS
2 VOA VIALS	LIME	ICED		VOLATILES
GLASS	PURPLE	ICED		SEMIVOLATILES

COMMENTS:

SAMPLE COLLECTED BY : M. CLEMONS

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 87 ACTNO: ADJ13 SAMNO: 010 QCC: _ MEDIA: WATER PL: DONA/JACOBS

ACTIVITY DES: MAYTAG COMPANY REF LATITUDE: __ __ __
LOCATION: NEWTON IA PROJECT NUM: A60 PT: LONGITUDE: ___ __ __

SAMPLE DES: SAMPLE DOWNSTREAM OUTFALL 001 DATE TIME FROM REF PT
LOCATION: NEWTON IA BEG: 09/16/87 __:__ EAST: ____
SMO NO: _____ SHIP NO: 00 LAB: ___ END: __/__/__ 15:20 NORTH: ____
STORET/SAROAD NO: _____ DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	COLOR	PRESERVATIVE	MGP	NAME
CUBI	WHITE	HNO3		METALS
2 VOA VIALS	LIME	ICED		VOLATILES
GLASS	PURPLE	ICED		SEMIVOLATILES

COMMENTS:

SAMPLE COLLECTED BY : M. CLEMONS

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 87 ACTNO: ADJ13 SAMNO: 007 QCC: D MEDIA: SOIL PL: DONA/JACOBS

ACTIVITY DES: MAYTAG COMPANY
LOCATION: NEWTON IA PROJECT NUM: A60

REF LATITUDE: __ __ __
PT: LONGITUDE: ___ __ __

SAMPLE DES: DOWNSTREAM OF 001
LOCATION: NEWTON IA
SMO NO: _____ SHIP NO: 00 LAB: ___
STORET/SAROAD NO: _____

	DATE	TIME	FROM REF PT
BEG:	09/16/87	__:__	EAST: ____
END:	__/__/__	15:30	NORTH: ____
			DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	COLOR	PRESERVATIVE	MGP	NAME
GLASS	WHITE	ICED		METALS
GLASS	LIME	ICED		VOLATILES

COMMENTS:

SAMPLE COLLECTED BY : M CLEMONS

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 87 ACTNO: ADJ13 SAMNO: 007 QCC: _ MEDIA: SOIL PL: DONA/JACOBS

ACTIVITY DES: MAYTAG COMPANY REF LATITUDE: __ __ __
LOCATION: NEWTON IA PROJECT NUM: A60 PT: LONGITUDE: ___ __ __

SAMPLE DES: DOWNSTREAM OF 001 DATE TIME FROM REF PT
LOCATION: NEWTON IA BEG: 09/16/87 __:__ EAST: ____
SMO NO: _____ SHIP NO: 00 LAB: ___ END: __/__/__ 1530 NORTH: ____
STORET/SAROAD NO: _____ DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	COLOR	PRESERVATIVE	MGP	NAME
GLASS	WHITE	ICED		METALS
GLASS	LIME	ICED		VOLATILES

COMMENTS:

SAMPLE COLLECTED BY : M. CLEMONS

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 87 ACTNO: ADJ13 SAMNO: 005 QCC: _ MEDIA: SOIL PL: DONA/JACOBS

ACTIVITY DES: MAYTAG COMPANY REF LATITUDE: __ __ __
LOCATION: NEWTON IA PROJECT NUM: A60 PT: LONGITUDE:___ __ __

SAMPLE DES: WASTE PILE DATE TIME FROM REF PT
LOCATION: NEWTON IA BEG: 09/16/87 __:__ EAST: ____
SMO NO: _____ SHIP NO: 00 LAB: ___ END: __/__/__ __:__ NORTH: ____
STORET/SAROAD NO: _____ DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	COLOR	PRESERVATIVE	MGP	NAME
GLASS	WHITE	ICED		METALS
GLASS	LIME	ICED		VOLATILES

COMMENTS:

metals sample 49 aliquots
volatiles from Borehole # 3-2

SAMPLE COLLECTED BY : M. CLEMONS

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 87 ACTNO: ADJ13 SAMNO: 004 QCC: _ MEDIA: SOIL PL: DONA/JACOBS

ACTIVITY DES: MAYTAG COMPANY REF LATITUDE: __ __ __
LOCATION: NEWTON IA PROJECT NUM: A60 PT: LONGITUDE: ___ __ __

SAMPLE DES: UNDERGROUND STORAGE TANK DATE TIME FROM REF PT
LOCATION: NEWTON IA BEG: 09/16/87 __:__ EAST: ____
SMO NO: _____ SHIP NO: 00 LAB: ___ END: __/__/__ 13:05 NORTH: ____
STORET/SAROAD NO: _____ DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	COLOR	PRESERVATIVE	MGP	NAME
GLASS	LIME	ICED	P	VOLATILES

COMMENTS:

sample from #2 borehole

SAMPLE COLLECTED BY : M. CLEMONS

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 87 ACTNO: ADJ13 SAMNO: 003 QCC: _ MEDIA: SOIL PL: DONA/JACOBS

ACTIVITY DES: MAYTAG COMPANY REF LATITUDE: __ __ __
LOCATION: NEWTON IA PROJECT NUM: A60 PT: LONGITUDE: ___ __ __

SAMPLE DES: INCINERATOR DATE TIME FROM REF PT
LOCATION: NEWTON IA BEG: 09/16/87 10:16 EAST: ____
SMO NO: _____ SHIP NO: 00 LAB: ___ END: __/__/__ __:__ NORTH: ____
STORET/SAROAD NO: _____ DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	COLOR	PRESERVATIVE	MGP	NAME
GLASS	LIME	ICED		VOLATILES

COMMENTS:

sample collected from borehole #12
of 25 borehole gas vapor survey.

SAMPLE COLLECTED BY : M. CLEMONS

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 87 ACTNO: ADJ13 SAMNO: 002 QCC: _ MEDIA: SOIL PL: DONA/JACOBS

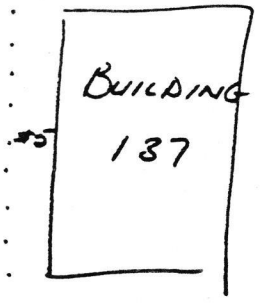
ACTIVITY DES: MAYTAG COMPANY REF LATITUDE: __ __ __
LOCATION: NEWTON IA PROJECT NUM: A60 PT: LONGITUDE: ___ __ __

SAMPLE DES: WASTE OIL RECYCLING DATE TIME FROM REF PT
LOCATION: NEWTON IA BEG: 09/15/87 __:__ EAST: ____
SMO NO: _____ SHIP NO: 00 LAB: ___ END: __/__/__ 21:35 NORTH: ____
STORET/SAROAD NO: _____ DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	COLOR	PRESERVATIVE	MGP	NAME
GLASS	LIME	ICED		VOLATILES

COMMENTS:



sample collected from borehole #5 of gas vapor survey.

SAMPLE COLLECTED BY : M. CLEMONS

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 87 ACTNO: ADJ13 SAMNO: 001 QCC: _ MEDIA: SOIL PL: DONA/JACOBS

ACTIVITY DES: MAYTAG COMPANY
LOCATION: NEWTON IA PROJECT NUM: A60

REF LATITUDE: __ __ __
PT: LONGITUDE: ___ __ __

SAMPLE DES: CONTAINER STORAGE AREA
LOCATION: NEWTON IA
SMO NO: _____ SHIP NO: 00 LAB: ___
STORET/SAROAD NO: _____

DATE TIME FROM REF PT
BEG: 09/16/87 __:__ EAST: ____
END: __/__/__ 13:45 NORTH: ____
DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	COLOR	PRESERVATIVE	MGP	NAME
GLASS	WHITE	ICED		METALS
GLASS	LIME	ICED		VOLATILES

COMMENTS:

sample - sediment at bottom of catch basin.

SAMPLE COLLECTED BY : M. CLEMONS

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 87 ACTNO: ADJ13 SAMNO: 008 QCC: _ MEDIA: WATER PL: DONA/JACOBS

ACTIVITY DES: MAYTAG COMPANY REF LATITUDE: __ __ __
LOCATION: NEWTON IA PROJECT NUM: A60 PT: LONGITUDE:___ __ __

SAMPLE DES: EQUIPMENT BLANK DATE TIME FROM REF PT
LOCATION: NEWTON IA BEG: 09/16/87 __:__ EAST: ____
SMO NO: _____ SHIP NO: 00 LAB: ___ END: __/__/__ __:__ NORTH: ____
STORET/SAROAD NO: _____ DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	COLOR	PRESERVATIVE	MGP	NAME
CUBI	WHITE	HNO3		METALS
2 VOA VIALS	LIME	ICED		VOLATILES

COMMENTS:

SAMPLE COLLECTED BY : M. CLEMONS

APPENDIX D

Groundwater Monitoring Plan

GROUNDWATER MONITORING PLAN

FOR

RCRA FACILITIES

AT THE

MAYTAG COMPANY

PLANT NO. 2

NEWTON, IOWA

AUGUST 1988

PROJECT NO. 2355.0010

Prepared by

EUGENE A. HICKOK AND ASSOCIATES
A Division of
James M. Montgomery, Consulting Engineers, Inc.
10550 New York Avenue, Suite C
Des Moines, Iowa 50322
(515) 253-0830

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision, and that I am a duly registered Professional Engineer under the laws of the State of Iowa.

Rodney J. Vrieger, P.E. — 8512 Iowa Reg. — 8-1-88 Date

CHAPTER 1

INTRODUCTION

The Chapter provides a brief summary of the objective, background information and existing site information.

OBJECTIVE

This plan of study is written to describe the assessment of groundwater contamination at the Maytag Company Plant No. 2 in Newton, Iowa. The plan will address requirements for monitoring well installation, collection, handling, analysis and interpretation of soil and water samples collected during the proposed site investigation. These requirements will ensure that all samples are collected in a consistent, acceptable manner which minimizes the possibility of introducing outside contamination or cross-contaminating the samples.

This plan will also comply with the monitoring plan identified in a letter from Eugene A. Hickok and Associates (EAH) to Environmental Protection Agency (EPA), Region VII regarding the groundwater contamination discovered during closure activities.

BACKGROUND INFORMATION

The Maytag Company Plant No. 2 located in Newton, Iowa, manufactures household appliances and laundry equipment. A closure plan was written by EAH, a division of James M. Montgomery, Consulting Engineers, Inc. (JMM) and approved in June, 1988 by EPA Region VII.

During closure activities, groundwater was encountered in a boring (#13) near the incinerator tank pad. Analysis of the groundwater showed contamination from toluene, methyl ethyl ketone (MEK), 1,1,1-trichloroethane, ethylbenzene and xylenes. This prompted Maytag officials to place a boring (#46) near the underground tank area. This also revealed groundwater contamination from solvents. Laboratory analyses are presented in Appendix A.

Also during closure activities, groundwater was encountered in a shallow boring (#24) near the waste pile area. Analysis of the groundwater showed levels of barium, cadmium and chromium above EPA interim primary drinking water standards as described by 40 CFR 265, Appendix III. A partial laboratory analysis is presented in Appendix B.

CHAPTER 2

DRILLING PROGRAM

This chapter provides the details and description of monitoring well installation for the incinerator area, underground storage tank area and waste pile area at the Maytag Company Plant No. 2.

LOCATION OF WELLS

The location of monitoring wells for the incinerator area, underground tank area and waste pile area are shown by Figure 2-1, 2-2 and 2-3 respectively. Monitoring well locations were determined by EAH personnel based on surface topography, known drainage areas, creeks, etc. Each hazardous waste management unit will consist of at least one hydraulically upgradient well and at least three hydraulically downgradient wells as defined by 40 CFR 265.91. If the proposed monitoring wells are not located to meet the requirements of 40 CFR 265.91, additional monitoring wells will be installed. The exact location of monitoring wells may be changed by field personnel due to utilities, groundwater flow or other features.

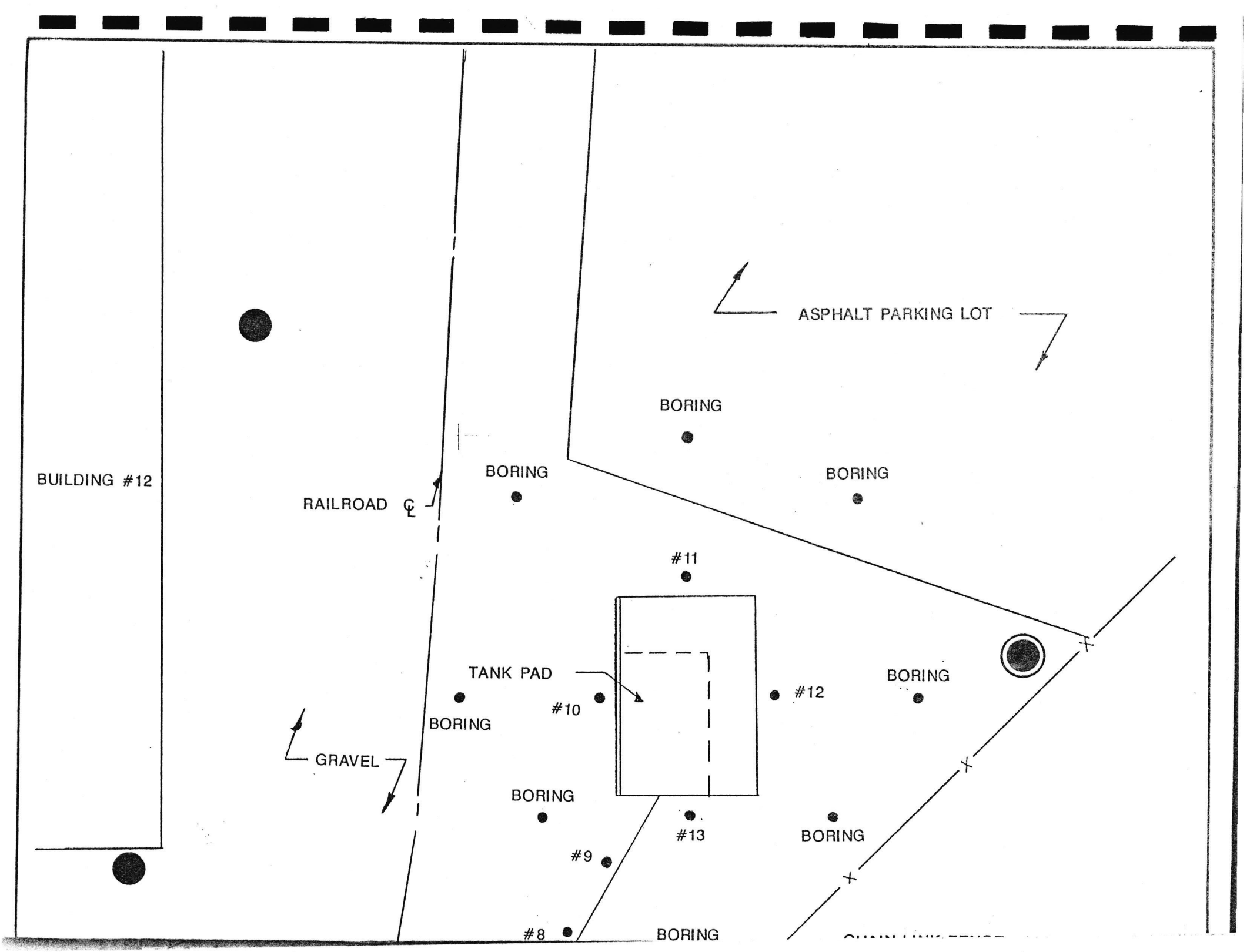
MONITORING WELL DEPTHS

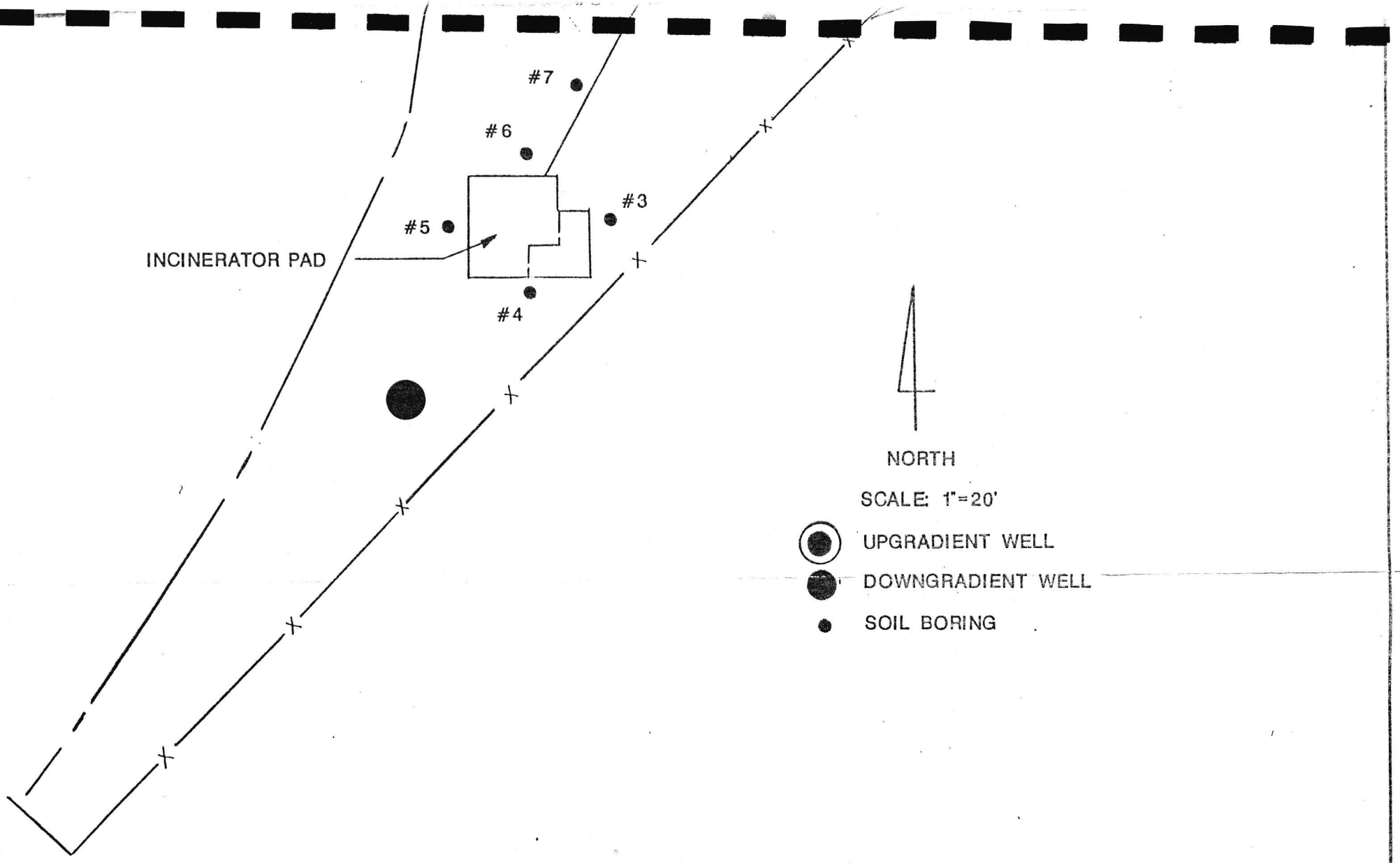
Monitoring wells will be constructed such that the well screen intersects the upper surface of the water table at the time of installation so that seasonal variations in the elevations of the water table will not cause the monitoring wells to become dry. Anticipated depths of the wells is twenty (20) feet. Monitoring well logs and construction details will be recorded at the time of installation.

MONITORING WELL CONSTRUCTION

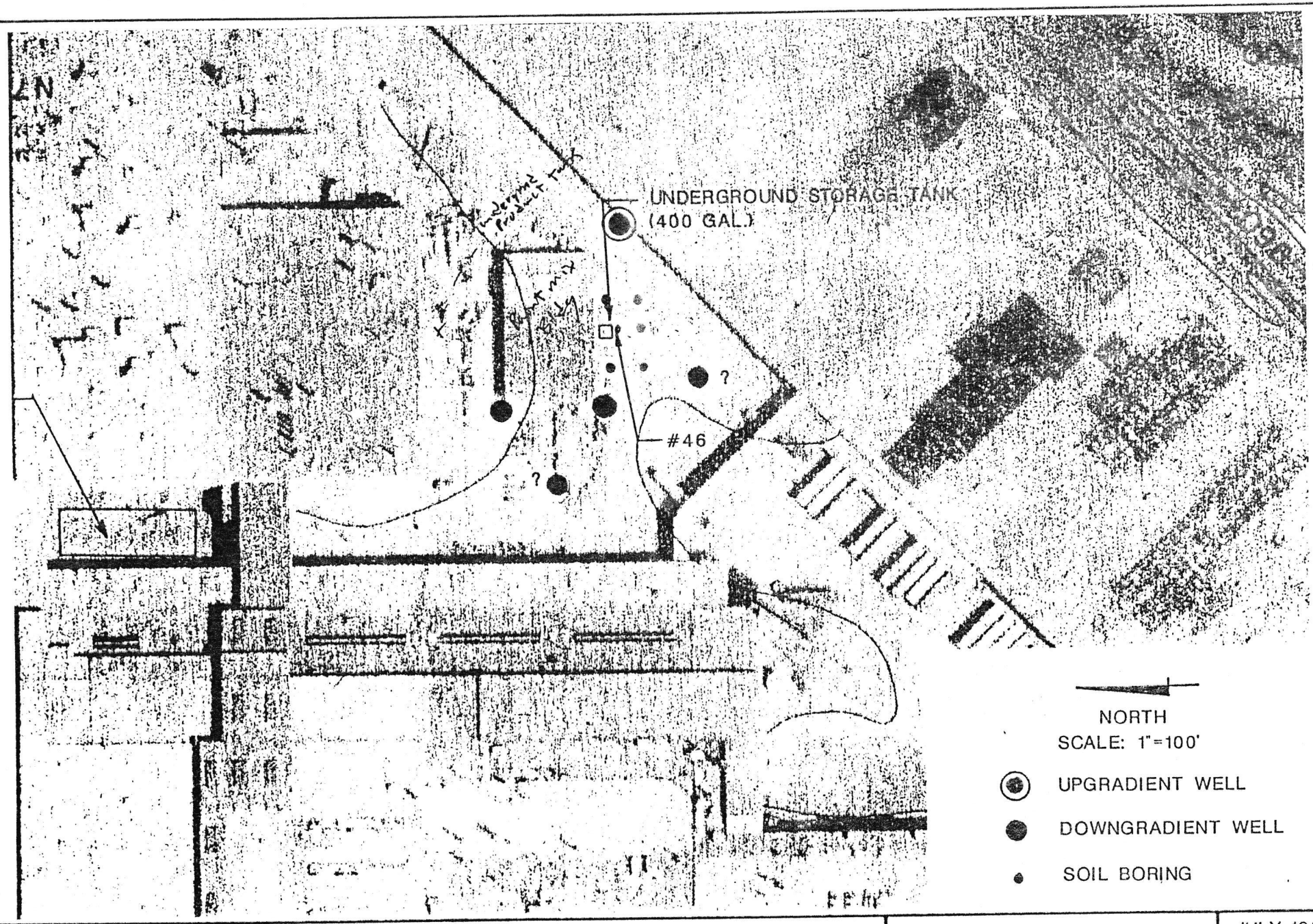
The monitoring wells shall be drilled using 10 1/4-inch outside (6 1/4-inch inside) diameter hollow-stem augers. Monitoring wells near the incinerator area and underground tank area shall be constructed with 2-inch threaded, flush-mount No. 10 slot stainless steel well screens and 2-inch threaded flush-mount stainless steel riser pipe. The monitoring wells near the waste pile area shall be constructed with 2-inch Triloc™ threaded, flush-mount No. 10 slot PVC well screens and 2-inch threaded, flush-mount PVC riser pipe. Ten-foot screens shall be utilized on all monitoring wells at the Maytag facility.

The wells will be placed in the hollow-stem auger and #1 Muscatine filter sand packed around the well screen by adding small amounts of sand to the hollow-stem auger and pulling the auger up in small increments. The sand pack will be placed a minimum of 18 inches above the top of the well screen. Approximately three feet of bentonite pellets will be placed in the annular space above the sand pack and hydrated. A grout mixture of concrete with 3-5% bentonite will then be placed in the annular space to the ground surface. A lockable protective metal cover (either flush-mount or stickup) will be placed over the monitoring wells into the concrete grount. The concrete grout will be placed such


ASPHALT PARKING LOT
BORING
BORING
BORING
BUILDING #12
RAILROAD ℄
#11
TANK PAD
#10
#12
BORING
BORING
GRAVEL
BORING
#13
BORING
#9
#8
BORING



THE MAYTAG COMPANY	E.A. HICKOK & ASSOCIATES MINNEAPOLIS-MINNESOTA DES MOINES-IOWA	JULY 1988
INCINERATOR AREA PROPOSED MONITORING WELL LOCATION		FIGURE 2-1



THE MAYTAG COMPANY

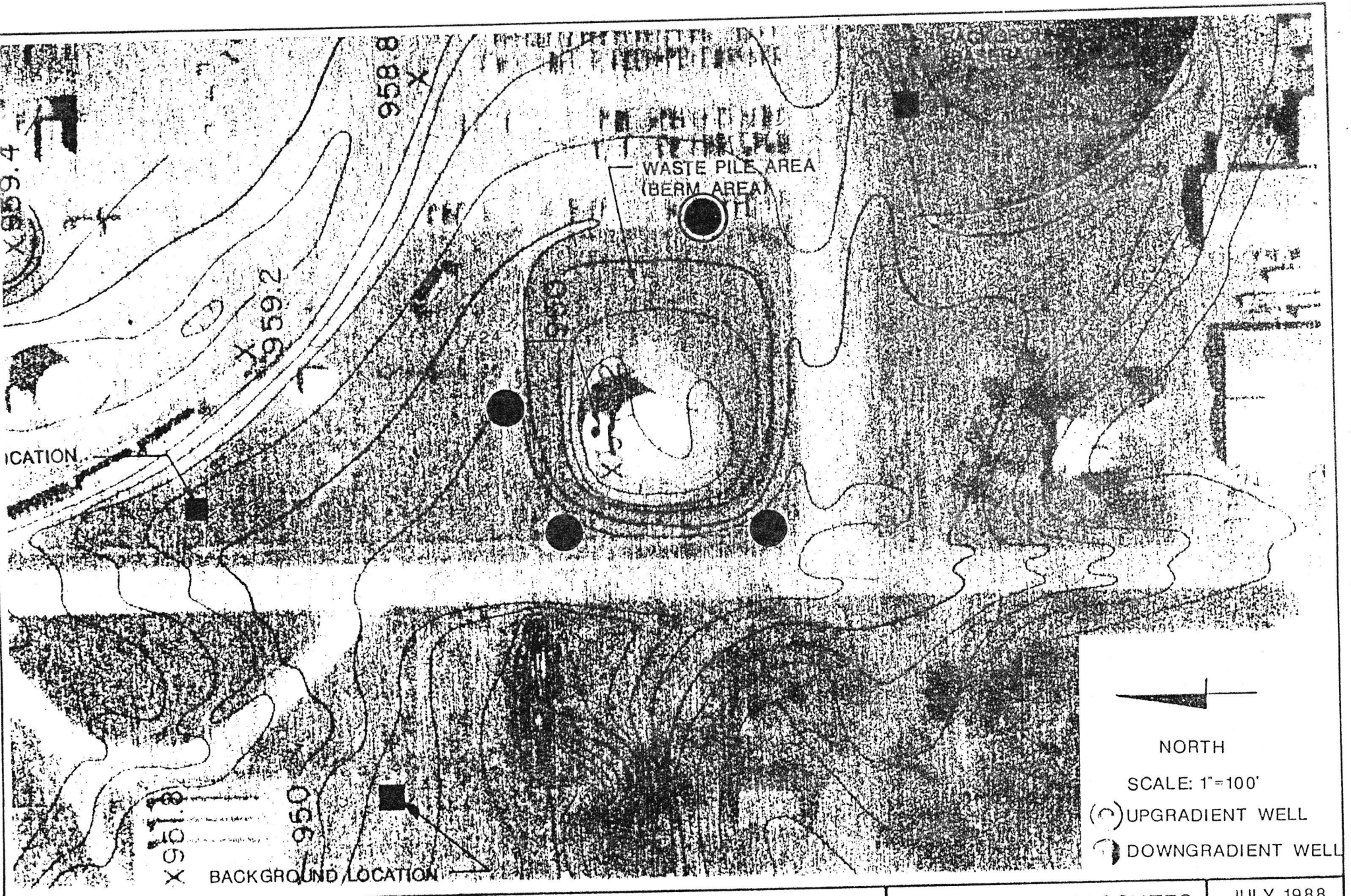
UNDERGROUND TANK AREA PROPOSED MONITORING WELL LOCATION

E.A. HICKOK & ASSOCIATES
MINNEAPOLIS-MINNESOTA
DES MOINES-IOWA

JULY 1988

FIGURE 2-2

506920



THE MAYTAG COMPANY

WASTE PILE AREA PROPOSED MONITORING WELL LOCATION

E.A. HICKOK & ASSOCIATES
MINNEAPOLIS-MINNESOTA
DES MOINES-IOWA

JULY 1988

FIGURE 2-3

that the surface will slope away from the protective casing. A typical monitoring well detail is presented in Figure 2-4. All of the drilling equipment will be steam cleaned between boreholes to prevent cross-contamination.

Some mesh removed to concrete to a depth

WELL DEVELOPMENT

Monitoring wells will be developed using a gasoline engine driven pump or an approved equivalent. The degree of development for each well will be determined in the field by EAH personnel. The method of over pumping will be used for these wells. Wells will be developed until clear water is being discharged from the pump. The volume of water removed for well development will be estimated and recorded in the log book. The water pumped from the wells will be placed in containers, analyzed and discharged to an on-site treatment facility. The entire pump and discharge line assembly will be steam cleaned between wells.

SOIL SAMPLE COLLECTION

Soil samples shall be collected using a split barrel sampler (standard or California modified). Soil samples will be collected at the following intervals:

Facility Location	Soil Sample Intervals
Incinerator Area	0-12", 12-24", 24-48", 10-11.5', 15-16.5' and 20-21.5'
Underground Tank Area	5-6.5', 10-11.5', 15-16.5' and 20-21.5'
Waste Pile Area	0-1.5', 5-6.5', 10-11.5', 15-16.5' and 20-21.5'

Sample intervals may be revised by field personnel due to the type of material drilled through or depth to groundwater. Soil samples will be classified during drilling operations and placed in laboratory containers. Sample label information shall include the place of collection, sample identification and date of collection. Soil samples will be analyzed for the following constituents:

- Waste Pile Area

- Arsenic	- Copper	- Barium
- Lead	- Cadmium	- Mercury
- Chromium	- Selenium	- Silver
- Hexavalent Chromium	- Zinc	- Nickel

- Incinerator Area

- Arsenic	- Nickel	- Barium
- Butanol	- Cadmium	- Toluene
- Perchloroethylene	- Copper	- Lead
- Methyl Ethyl Ketone	- Xylene	- Mercury
- Hexavalent Chromium	- Benzene	- Selenium

- 1,1,1-Trichloroethane
- Methyl Isobutyl Ketone
- Ethylbenzene
- Silver
- Acetone
- Zinc
- Chromium

INFIELD HYDRAULIC CONDUCTIVITY TESTS

Within fourteen (14) days after installation of the monitoring wells, an infield hydraulic conductivity test will be performed on each monitoring well. This will be conducted by placing a slug tool into the well and measuring water levels with respect to time until equilibrium is reached. Equipment used for the hydraulic conductivity tests will be decontaminated with detergent and water after each test.

SITE SAFETY PLAN

A site safety plan has been prepared for EAH personnel and its contractors during the monitoring well installation outlined in this document. A copy of the company-approved plan is presented in Appendix C.

SURVEY OF WELL LOCATION

Location of monitoring wells shall be surveyed using existing features and buildings for horizontal control. Top of monitoring well casing elevations and adjacent ground surface elevations will be surveyed using the following benchmarks:

- Arrowhead of fire hydrant southeast corner of North 19th Avenue and East 8th Street, EL = 966.43.
- Arrowhead of second fire hydrant east of East 8th Street on North 19th Avenue, EL = 969.41.
- Railroad spike in a lightpole on the northeast corner of North 11th Avenue and East 8th Street at the railroad crossing, EL = 960.32.

CHAPTER 3

WATER SAMPLING EQUIPMENT AND PROTOCOL

This chapter provides steps for quality control and quality assurance during groundwater samples at the waste pile area, incinerator area and underground tank area.

SAMPLING CONTAINERS

All sample containers will be obtained from the Maytag Company Laboratory, Plant No. 2, in Newton, Iowa. Samples will be placed in those containers specially prepared by the Maytag Laboratory.

Sample containers will be labeled with a waterproof pen at the time of collection to prevent sample misidentification. The sample label will include the following information:

- Place of Collection
- Sample Identification Number
- Date of Collection

The name of the collector and time of collection will be logged in a bound field book.

WATER LEVEL MEASUREMENTS

Depth to the static water table will be measured at each monitoring well prior to sampling. The measurements will be made using a steel tape that has water indicating paste applied to one side of the tape. McCabe Water Level indicator paste will be used for this purpose. These measurements will be made from the top of well casing used during the level survey. The measurements will be made to the nearest 0.01 foot. The wetted portion of the steel tape will be rinsed with distilled water prior to use in another well.

WELL PURGING

All monitoring wells will be purged prior to sampling to ensure that the sample is representative of the groundwater and does not contain water which has been standing in the well. Three static well volumes will be removed prior to sample collection. The monitoring wells will be bailed using a Teflon™ bailer attached to a segment of new cotton rope. The bailer will be rinsed thoroughly with distilled water between wells. New rope will be used on each well. The number of bails to be removed from a 2-inch diameter well will be calculated as follows:

$$\text{\# of bails} = (\text{cross-sectional area})\ (\text{water column})\ (7.48\ \text{gal/ft3})\ (\text{bail}/0.25\ \text{gal})\ (3\ \text{well volumes})$$

where

- cross-sectional area for a 2-inch diameter well is 0.02182 sq. ft.
- length of waste column = (total length of well) - (depth to water)

or # of bails = (1.958 bails/foot of water column) (length of water column)

The log book format to calculate the number of bails to be purged is as follows:

Well No.	Total Well Depth From TOC (ft)	Depth to Water (ft)	Length of Water Column (ft)	# of Bails to be Purged	# of Bails Actually Purged	Time and Comments
MW-1						
thru						
MW-12						

Non-sterile surgical gloves will be worn while purging and care will be taken not to allow the bailer or bailer rope to contact the ground or contaminated surfaces. If a monitoring well does not yield sufficient water to allow the purging of three well volumes, the well will be bailed to dryness once and will then be sampled as soon as the well recovers. If the recovery time exceeds three hours, the well will be sampled as soon as a sufficient volume of water is available.

All contaminated water from well purging will be containerized and analyzed. The collected water will be discharged to the on-site treatment facility at appropriate rates based on the laboratory results.

SAMPLE COLLECTION

The samples from the monitoring wells will be obtained using a Teflon™ bailer and cotton rope. The bailer should not be dropped into the water, but should be slowly lowered into the water to prevent degassing and agitation of the sample. The contents of the bailer should be carefully transferred to the sample container. Headspace should be kept to a minimum. The sampling equipment will not be placed directly on the ground or other contaminated surface. Non-sterile surgical gloves will be worn while sampling and will be changed between each well. During each sampling event, one set of field blanks will be collected. The field blanks will be filled on site with distilled water from the same source that is used to rinse the bailers. The filled blank containers will be labeled "Field Blank."

Also during each sampling event, a duplicate sample will be collected. The duplicate sample will be collected from one well at the Maytag Company Plant No. 2. The duplicate containers will be labeled "Duplicate." The duplicated well will be logged in the field book.

CHAPTER 4

ANALYTICAL REQUIREMENTS

This Chapter will provide the analytical requirements and sampling frequency for the waste pile area, incinerator area and underground tank area.

PARAMETERS

The monitoring wells will be sampled for the following analytes:

- Arsenic
- Barium
- Cadmium
- Chromium
- Flouride
- Lead
- Mercury
- Selenium
- Silver
- Copper
- Nickel
- Zinc
- Coliform Bacteria
- Chloride
- Iron
- Sulfate
- pH
- Specific Conductance

The monitoring wells at the incinerator area and underground tank area will be sampled for the following additional analytes:

- Butanol
- Methyl Ethyl Ketone (MEK)
- Methyl Isobutyl Ketone
- Benzene
- Ethylbenzene
- Toluene
- 1,1,1-Trichloroethane
- Xylenes
- Perchloroethylene

Note that all metal analyses for the groundwater samples shall be filtered through a 0.45 micron filter at the Maytag Laboratory or in the field if sent to other laboratories. Groundwater samples shall be preserved following filtration.

Also note that temperature, pH and specific conductance will be analyzed in the field using portable conductivity and pH meters.

SAMPLE COLLECTION FREQUENCY

Monitoring wells will be sampled within seven (7) days and thirty-seven (37) days of installation by EAH personnel. Additional sampling will be conducted as necessary prior to submittal of the remedial action plan.

MAYTAG
PROCESS ENGINEERING
ANALYSIS REPORT

To: Steve Roth

cc: T. G. Townsend

Sample No: 88 0632 — Date Received: 6/28/88

Project No: — File: Closure

Requested by: Steve Roth — Cost Center: 1863

Date Sampled: 6/28/88 — Time Sampled: 0800

Sample Description: 13, ground water south of operating tanks

Reason for Analysis: Closure activities.

ANALYSIS

PARAMETER	ANALYTICAL RESULTS	DATE OF ANALYSIS	ANALYST	STD METHOD
Acetone	<160 mg/L	6/29/88	King	8240
2-Butanone	50.8 mg/L	6/29/88	King	8240
Trichloroethane	13.4 mg/L	6/29/88	King	8240
Benzene	<8 mg/L	6/29/88	King	8240
MIBK	<80 mg/L	6/29/88	King	8240
Tetrachloroethe	<8 mg/L	6/29/88	King	8240
Toluene	240 mg/L	6/29/88	King	8240
Ethylbenzene	8.2 mg/L	6/29/88	King	8240
Xylenes	48.7 mg/L	6/29/88	King	8240
Butanol	<320 mg/L	6/29/88	King	8240

Analysis by: Jeff King — Approved by: Stephen

Remarks: Sample diluted 1:1667 for volatile organics analysi
tion limits are adjusted accordingly.

What depth were these samples taken?

MAYTAG
PROCESS ENGINEERING
ANALYSIS REPORT

To: Steve Roth

cc: T. G. Townsend

Sample No: 88 0690 Date Received: 6/29/88

Project No: File: Closure

Requested by: Steve Roth Cost Center: 1863

Date Sampled: 6/29/88 Time Sampled: 0730

Sample Description: 46, groundwater sample, 3' south of U. G. tank

Reason for Analysis: Closure activities.

ANALYSIS

PARAMETER	ANALYTICAL RESULTS	DATE OF ANALYSIS	ANALYST	STD METHOD
Acetone	<100 mg/L	6/29/88	King	8240
2-Butanone	360 mg/L	6/29/88	King	8240
Trichloroethane	<5 mg/L	6/29/88	King	8240
Benzene	<5 mg/L	6/29/88	King	8240
MIBK	<50 mg/L	6/29/88	King	8240
Tetrachloroethe	<5 mg/L	6/29/88	King	8240
Toluene	220 mg/L	6/29/88	King	8240
Ethylbenzene	3 (J) mg/L	6/29/88	King	8240
Xylenes	12 mg/L	6/29/88	King	8240
Butanol	<200 mg/L	6/29/88	King	8240

Analysis by: Jeff King Approved by: Stephen Roth

Remarks: (J) Estimated value. Sample diluted 1:1000 for volatile organics analysis, detection limits are adjusted accordingly.

PROCESS ENGINEERING
ANALYSIS REPORT

To: Stephen Roth

cc: T. G. Townsend

Sample No.: 88-0677 Date Received: 6/28/88

Project No.: Closure File: Closure

Requested By: Stephen Roth Cost Center: 1863

Date Sampled: 6/28/88 Time Sampled: 2:47 PM

Sample Description: #24 Water Sample @ 2 ', Berm Area

Reason for Analysis: Closure Activities

PARAMETER	ANALYTICAL RESULTS	ANALYSIS DATE OF ANALYSIS	ANALYST	STD METHOD
Arsenic	-			
Barium	5 mg/L	6/30/88	Avila	3050
Cadmium	0.03 mg/L	6/30/88	Avila	3050
Chromium (T)	1.6 mg/L	6/30/88	Avila	3050
Chromium (Hex)	-			
Copper	0.4 mg/L	6/30/88	Avila	3050
Lead	-			
Mercury	-			
Nickel	0.9 mg/L	6/30/88	Avila	3050
Selenium	-			
Silver	< 0.1 mg/L	6/30/88	Avila	3050
Zinc	5.4 mg/L	6/30/88	Avila	3050
Acetone	< 4 ug/L	6/29/88	King	8240
Butanone	< 11 ug/L	6/29/88	King	8240
Trichloroethane	1.9 ug/L	6/29/88	King	8240
Butanol	< 50 ug/L	6/29/88	King	8240
Benzene	< 0.3 ug/L	6/29/88	King	8240
MIBK	< 0.9 ug/L	6/29/88	King	8240
Tetrachloroethane	< 0.5 ug/L	6/29/88	King	8240
Toluene	< 0.4 ug/L	6/29/88	King	8240
Ethyl Benzene	< 0.5 ug/L	6/29/88	King	8240
Xylene	< 0.4 ug/L	6/29/88	King	8240

DL not low enough

Where are results for As, Se, Pb & Hg?

Analysis by: Jeff King Approved by: Steph. Roth

Remarks: As, Se, Pb to be run by GFAAS. Cr, Hg to be run by UHL, Des Moines.

Where are results for As, Se, Pb & Hg?

MAYTAG

August 15, 1990

Mr. Don Lininger
EPA
Region VII
726 Minnesota Avenue
Kansas City, KS 66101

Dear Mr. Lininger:

Ref. Final RFA Report Maytag Company, Plant 2, September 30, 1988, by Jacobs Engineering Group, Inc., Project Number 05-B285-00 assigned to Tetra Teck, Inc., Project Number 3620-09.

Maytag has reviewed a copy of the RCRA facility assessment for Plant 2 and would like to make the following comments/corrections:

1.1 Ref. Section 1.3.1, page 3

The preliminary review of the Maytag Company Plant 2 references Region VII & IA DNR files pertaining to the "landfill." There is no landfill at Plant 2; therefore, we assume the word "landfill" should really read "facility."

1.2 Ref. Section 2.1, page 5

Maytag Company Plant 2 has two (2) NPDES permitted outfalls. Outfall (No. 001) is our direct discharge permit from Maytag's waste water treatment facility. The discharge consists of the treated waste water covered in Section 2.1. Outfall (No. 002) is a non-contact discharge consisting of cooling water.

1.3 Ref. Section 2.2, page 5

A reference is made to metal melting and die casting as a facility operation. There is no metal molding or die casting at Plant 2. The waste water treatment facility at Plant 2 does treat oily waste from the metal molding and die casting operation located at Plant 1.

1.4 Ref. Section 2.3, page 7, Waste Solvents

Maytag no longer uses tetrachloroethylene. The F001 waste solvents are shipped in less than 90 days to Waste Research & Reclamation in Eau Claire, WI, for reprocessing. The adhesive clean-up solvent is also shipped to Waste Research & Reclamation. Miscellaneous solvents--such as naphtha--are shipped to an energy reclaimer on a routine basis.

1.5 Ref. Section 2.3, page 7, Paint Waste

A report was issued to the Region VII EPA documenting that none of the barrels of paint sludge were ignitable wastes (D001). All barrels referenced in the R. A. have been disposed of.

1.6 Ref. Section 5.0, Container Storage Area

An enclosure has been constructed over the pad and a sealant put on the concrete. This will eliminate rain infiltration into the sump.

1.7 Ref. Section 2.3, page 7, Baghouse Dust

Recent analysis of this waste, Figure 1 shows it to be non-hazardous. Annual generation is less than 3 drums.

1.8 Ref. Section 2.3, page 8, Waste Oil

In 1988, Maytag reclaimed 57,000 gallons of oil for energy recovery in our on-site boilers.

1.9 Ref. Section 2.3, page 8, Plant No. 1

Waste acid is no longer generated at Plant 1. The Alodine 1200 Unit is no longer operated at Plant # 1, and acid is not used in the Rubber Mold Cleaning Operation.

1.10 Ref. Section 2.4, page 9

K063 should have been referred to as K062; and, since the inspection, this waste designation only applies to SIC Codes 331 and 332.

1.11 Ref. Section 3.1, page 12

There are no residences immediately to the south of Plant 2 and only one residence to the immediate west of Plant 2. All residences are served by city water.

1.12 Ref. Section 6.0, Above Ground Storage Tanks, Status of Unit

The flush solvent stored in these tanks is an F listed waste (F005).

The 4/24/89 inspection references seepage around above ground tank by the incinerator not the above ground tanks in Paint Mix.

Secondary containment has been installed in this storage area, and the tanks are inspected daily.

1.13 Ref. Section 7.0, Waste Water Treatment Facility

Maytag does not store sludge on site prior to disposal; therefore, we do not believe this waste treatment facility should be subject to this RCRA Facility Assessment.

For the record, however, waste water from the water-based primer (electrocoat) system is discharged to a POTW.

There appears to be a misunderstanding as to how our sludge is handled. The sludge pulled off the bottom of the Clarifier does not contain 30% solids until after it is stabilized, decanted and vacuum filtered.

1.14 Ref. Section 8.0, Waste Recycling Operation

Maytag currently recovers and burns $\approx$ 57,000 gallons of waste oil. The mechanism for off loading untreated waste oil from Plant 1 is being modified. Instead of draining the oil into a pit, a solid connect will be made between the oil hauling container and the line draining to the pit. The waste oil/water mixture will then be pumped by Waste Treatment personnel into the 10,000-gallon holding tank.

In July 1989, 4 monitoring wells were installed around Building 137 to comply with leak detection requirements for the U.S.T. Regulation. No oil sheen was found on water samples pulled from these wells.

It seems as though Maytag would fall under 266.42(c) & 262.44 "Standards applicable to generators of used oil burned for energy recovery." Since this is not "off spec" oil, we do not need to notify the EPA stating location & general description of used oil management activities. Maytag will, however, keep records of analysis for 3 years verifying the oil is not off-specification oil." This we are currently doing.

1.15 Ref. Section 9.0, Incinerator

Additional assessment work has been completed on this closure project, and all results have been submitted to the EPA.

1.16 Ref. Section 10.0, Underground Storage Tanks

Once again, additional assessment has been completed to assess contamination with the 400-gal UST.

1.17 Ref. Section 11.0, Waste Pile

11.3 Maytag has used a vacuum filter prior to the publication of the temporary exclusion August 6, 1981. The sludge was further stabilized to prevent migration of Ni.

11.4.1 There appears to be some confusion. The sludge from the waste/water treatment facility was vacuum filtered at this time. Electrocoat waste water is segregated from the general industrial water.

11.4.3 Further borings and monitoring wells indicate there is no groundwater contamination. A Final Closure cf this unit and the three interim barrel storage areas has been submitted to Region VII for review and comment.

If you would like to discuss these comments further, please call me at 515/ 791-5701.

Sincerely,

Stephen Roth

Stephen Roth
Manager, Process Engineering

SR:nj

MAYTAG
PROCESS ENGINEERING
ANALYSIS REPORT

Figure 1

To: Ray Rusek

cc:

Sample No: 87 0617

Project No:

File: ~~Porcelain Waste~~ Wheelabrator Dust (Porcelain)

Requested by: Ray Rusek

Cost Center: 1863

Date Sampled:

Time Sampled: 0930

Date Received: 8/03/87

Collector: Ray Rusek

Process Generating Waste: Wheelabrator

Sampling Location: collection barrel in porcelain

Sampling Technique: grab

Sample Description: Wheelabrator Dust

Based on the analytical data contained in this report this solid waste should be classified as:

HAZARD CHARACTERISTIC	(YES/NO)	EPA H. W. NO.
Ignitability	NO	
Corrosivity	NO	
Reactivity	NO	
EP Toxicity	YES	D006
Listed Waste	NO	
Nonhazardous	NO	

Sample No: 87 0617
Sample Description: Wheelabrator Dust

CORROSIVITY

PARAMETER	ANALYTICAL RESULTS	DATE OF ANALYSIS	ANALYST	STD METHOD
pH, As Received				
pH, 10% Slurry	8.8	12/28/88	J. King	9040

REACTIVITY

PARAMETER	ANALYTICAL RESULTS	DATE OF ANALYSIS	ANALYST	STD METHOD
Cyanide, Total	<1 mg/kg	2/01/88	St Hyg Lab	335.2
Cyanide, Reactive				
Sulfide, Total				
Sulfide, Reactive				

IGNITABILITY

PARAMETER	ANALYTICAL RESULTS	DATE OF ANALYSIS	ANALYST	STD METHOD
Flashpoint	Deg C		J. King	1010

Sample No: 87 0617
Sample Description: Wheelabrator Dust

EP TOXICITY

Initial pH of EP Toxicity: 8.83 Final pH of EP Toxicity: 6.85

PARAMETER	ANALYTICAL RESULTS	DATE OF ANALYSIS	ANALYST	STD METHOD
Arsenic	<0.06 mg/L	1/15/88	J. King	6010
Barium	1.04 mg/L	1/15/88	J. King	6010
Cadmium	0.793 mg/L	1/15/88	J. King	6010
Chromium (tot)	<0.02 mg/L	1/15/88	J. King	6010
Chromium (hex)	<0.05 mg/L	2/01/88	St Hyg Lab	7196
Copper	0.016 mg/L	1/15/88	J. King	6010
Lead	0.26 mg/L	1/15/88	J. King	6010
Mercury	<0.001 mg/L	2/01/88	J. King	245.1
Nickel	38.8 mg/L	1/15/88	J. King	6010
Selenium	<0.25 mg/L	1/15/88	J. King	6010
Silver	<0.01 mg/L	1/15/88	J. King	6010
Zinc	2.19 mg/L	1/15/88	J. King	6010
Nitrate (as NO3)	1.3 mg/L	2/01/88	St Hyg Lab	353.2
Fluoride	14 mg/L	2/01/88	St Hyg Lab	14327

Sample No: 87 0617
Sample Description: Wheelabrator Dust

TOTAL CONSTITUENT ANALYSES

PARAMETER	ANALYTICAL RESULTS	DATE OF ANALYSIS	ANALYST	STD METHOD
Arsenic	25 mg/kg	1/15/88	J. King	6010
Barium	1130 mg/kg	1/15/88	J. King	6010
Cadmium	230 mg/kg	1/15/88	J. King	6010
Chromium (tot)	4060 mg/kg	1/15/88	J. King	6010
Chromium (hex)				
Copper	1090 mg/kg	1/15/88	J. King	6010
Lead	508 mg/kg	1/15/88	J. King	6010
Mercury				
Nickel	208000 mg/kg	1/15/88	J. King	6010
Selenium	<25 mg/kg	1/15/88	J. King	6010
Silver	<1 mg/kg	1/15/88	J. King	6010
Zinc	1960 mg/kg	1/15/88	J. King	6010
Phenols	<1 mg/kg	2/01/88	St Hyg Lab	420.2

PHYSICAL ANALYSES

PARAMETER	ANALYTICAL RESULTS	DATE OF ANALYSIS	ANALYST	STD METHOD
Percent Solids	99.3 %	1/21/88	J. King	
Bulk Density	106 lb/ft3	3/01/88	J. King	

Sample No: 87 0617
Sample Description: Wheelabrator Dust

ADDITIONAL ANALYSES

PARAMETER	ANALYTICAL RESULTS	DATE OF ANALYSIS	ANALYST	STD METHOD

ANALYSIS BY: Jeffrey King APPROVED BY: [illegible]

REMARKS: Total analyses are given as mg/kg on a dry weight.
While the EP result for Cadmium (0.79 mg/L) is below the threshold of 1.0 mg/L, it is close enough to require additional analyses before it could be classified as a nonhazardous waste.